THE LANCET.

VOL. II.] LONDON, SATURDAY, MAY 16, 1840. [1839-40.

COURSE OF LECTURES
ON THE
PHYSIOLOGY AND PATHOLOGY OF THE BLOOD,
AND
THE OTHER ANIMAL FLUIDS,

DELIVERED IN THE SESSION OF 1839-40,

AT THE

School of Anatomy adjoining St. George's Hospital.

BY HENRY ANCELL, ESQ., SURGEON.

LECTURE XVI.

Volume of blood in the system: its circulation; forces by which it is moved; due quantity essential to health.—General hyperæmia or sanguine plethora; its causes; symptoms; post-mortem appearances; consequences.—General anæmia or bloodlessness; its causes; symptoms; post-mortem appearances; consequences.—Local hyperæmias or congestions.—Local anæmias.—Practical importance of the subject of excess and deficiency of blood.

GENTLEMEN:—Although the subjects hitherto considered admit of being much more fully developed, I find it necessary, without further delay, to call your attention to the *quantity of blood* in the system, and its relations to health and disease.

It is a general observation, that weak animals have a less relative quantity of blood than the larger and more muscular, and that in the highest orders, and especially in man, the proportion is by far the greatest. The quantity circulating in the human body has been variously computed by different authorities; the following are a few examples:—

Borelli	20lbs.
Haller	30
Blumenbach	33
Young	40
Dumas	25
Fletcher	30

But the exact quantity cannot be arrived at; for, although the contents of the larger arteries and veins may be calculated, we can form no accurate estimate of the contents of the capillaries; the quantity lost by a fatal hæmorrhage, for obvious reasons, is no criterion whatever; and it cannot be collected, after death, without admixture with other fluids. Still, advantage would result, especially in a pathological point of view, from approximative estimates of the quantity of blood in the system. It evidently varies according to many circumstances; the young, for instance, have more than adults, and adults more than the aged; and it is an observation as old as Aristotle, that fat persons have a less proportion than those who are lean. Individual constitutions have also their appropriate quantity of blood. The quantity of blood and the weight of the individual bear a ratio to each other. Upon the whole, the mean estimate of Haller, adopted by Fletcher, is probably as near as possible to the truth, by which an individual, weighing 150 pounds, has 30 pounds of blood, 24 being venous and 6 arterial; and, taking the contents of the lymphatic system of vessels at 12 pounds, a person of this weight will have 42 pounds of circulating fluids. The relative quantity of arterial blood is greatest in children and females, and accordingly that of venous blood in old people and males. Taking the venous blood, chyle and lymph, at 36 pounds, as above, old persons and males have the greatest proportion of the coloured fluid, and young persons and females of the colourless, or lymphatic fluid. So far as it may be necessary to adopt a standard of the quantity of blood in the system, it may be well to adhere to the above. Would it not be absurd to imagine such a mass of dead matter circulating in a living body?

This quantity of blood is contained in the cavities of the heart and in the blood-vessels, which it completely fills, and upon which, imagined in a state of rest, it exerts a uniform pressure, but instead of being at rest, it is in continual motion during life. It performs a shorter circuit through the lungs, and one great circuit throughout the body, both, according to the experiments of Hering, recently confirmed by Mr. Blake, in a period of about 25 or 30 seconds, but,

as more usually estimated, in from one to two minutes, or longer. This is the Harverian circulation. During its course it is split into innumerable minor streams, which are truly individual circuits, traversing the organs and tissues for the purposes of life, and which are performed in variable periods. The causes of this motion are by no means at present fully ascertained, nor are its laws determined with any thing like mathematical precision; but the circumstances best understood respecting it are the following:—The *heart* is a muscular organ, having an inherent power of contractility; and the stimulus of the blood, by virtue both of its quantity and qualities, excites the contraction of its walls upon the contents of its cavities. About two ounces of fluid is projected in jerks, and directed by valves, 70 or 80 times per minute, into the arteries. The *arteries* are elastic membranous tubes; the sum of the calibre of the smaller branches exceeding the calibre of their trunks, has caused them to be compared to a cone, with the apex at the aortic orifice. The blood propelled by the force of the heart into the arteries, maintains the motion of the already circulating fluid; but owing to the resistance met with, an additional pressure is exerted on their elastic parietes, which thus become distended. According to the recent researches of M. Poiseuille, "the force with which a molecule of blood moves in the whole course of the aortic system is exactly the same in whatever point of the system we may consider it;" so that no part of the force communicated to the blood by the heart is lost in the arteries. This is accounted for by the circumstance that the force expended in dilating their elastic parietes, is regained by their subsequent contraction, the only effect being to convert the repeated jerks into a continuous flow.

The *capillaries* form a net-work of microscopic vessels, in which the minute arteries terminate and the minute veins commence; their calibre is in proportion to the size of the blood corpuscles, and they are distributed by the arteries through the tissues in various forms, being straight, dendritic, pencillated, convoluted, foliated, and the like; the net-work formed by them differing in figure and size, circumstances which, under new investigations, are likely to assume a greater importance than has hitherto been accorded to them. They receive the blood from the arteries with undiminished force, and their walls being constantly distended by the fluid, as in the case of the arteries, by virtue of their elasticity, they maintain the motion of its current with a force very slightly, if at all, lessened; but it now becomes *slower* in consequence of their increased area, and the increased quantity of their contents. The velocity of their contents must, however, be very different in different capillaries, and at different times, owing to variations in proportional size and to pressure, as well as to the position and motions of the body, and of its parts. The *veins* are much more distensible and less elastic than the other vessels. The influence of the heart's action is felt in them, but in consequence of their slighter elasticity, and the fact that their parietes are frequently confined and firmly bound down, its power is in a great measure expended, and accordingly there are certain known auxiliary forces, which aid the course of the blood in its passage back to the heart. With the action of the valves, which not only oppose the retrocession of the blood, but also the effect of gravitation, the pressure of the surrounding media is one of these auxiliaries, the blood flowing through this part of the vascular system with much greater facility in the direction of its gravity. It is received by the veins in a continuous stream, proceeding from branches towards trunks, always passing, in the aggregate, from a larger to a smaller cavity, so that by the known laws of hydro-dynamics, its velocity is increased as it progresses towards the heart. *Respiration* and the action of the chest is another of these auxiliary forces. During inspiration a suction power occurs, and the blood rushes in from the veins, to assist in filling an impending vacuum; the influence of this, however, is felt only partially in the venous system. During expiration also, the onward motion of the blood, both in arteries and veins, is favoured by pressure. Thus, the described causes of the circulation of the blood, are—the action of the heart, the elasticity of the vessels, pressure, and the suction power of the chest. Added to these, the vessels possess an organic vital contractility, not periodic in its action, not depending on any mechanical principle, but which is more especially evident in many pathological phenomena. In accordance with the laws by which liquids traverse inert capillary tubes, the capillary vessels are lined with a layer of liquor sanguinis, and friction between the blood and their parietes is obviated. Some physiologists also believe that the circulation cannot be satisfactorily accounted for, without admitting an active power of dilatation in the heart; and others, among whom are some of the most eminent foreigners, are of opinion that the blood possesses a *power of self-propulsion*.

Although the force with which the blood is moved is the same in all parts of the aortic system, it is also proved by M. Poiseuille that it varies from one moment to the other, and, in particular, it is less during inspiration, and greater during expiration, a circumstance which serves to account for many phenomena in the animal economy. It is also variable, according to age, sex, temperament, idiosyncracy, exercise and rest, health, disease, the passions, repletion, and loss of blood. It is influenced by substances introduced into the circulation, as camphor, assa-

fœdita, alcohol, &c. Lessening the capacity of the arterial system increases this force in the remainder, as in the case of tying the artery of a limb, and in that of amputation. The whole of these circumstances are of the most extensive application in explaining the phenomena of animal life, and to them must be referred, in numerous instances, the effects which result from alterations in the quantity of blood circulating in the vessels.

A due proportion, in every individual, between the quantity of blood contained in the system, and the size and capacity of the vessels and organic solids, is absolutely indispensable for the continuance of health; but the history already given of the sources from which the materials of this fluid are supplied, and of the secretions and excretions, amply illustrates the general fact, that it is liable in the same person to frequent and great changes, owing to numerous causes in continual operation, some of which may be called internal or pathological, and others external or hygienic. Without stopping to inquire into first causes, it is well known, and has been admitted in all ages, that in consequence of modified nutrition, or organic construction, original or acquired, individuals have what is called a predisposition to form more or less blood. From greater activity of absorption, greater energy or capacity of the heart and arteries, of the digestive organs, or of the respiratory apparatus, some individuals make a great deal of blood from a very little aliment. If such persons take proportionate exercise, if a due balance between assimilation and waste exist, if the secretions and excretions are duly performed, they remain in good health; but, on the other hand, if there be an undue proportion of material received into the vessels, as compared with that which is eliminated, a disproportionate quantity of blood accumulates in the system. To this there is fortunately a limit set by Nature in the important physiological law, that absorption is diminished in proportion to the repletion of the vessels. Yet this excess of blood is liable to be produced by two series of what are called "exciting" or occasional causes, and this may occur in any constitution, whether predisposed or not. When the blood is thus augmented in quantity, it is attended with numerous important, and not infrequently with fatal consequences.

I scarcely know whether to turn to the aphorisms of Boerhaave, or to the more recent writings of M. Andral and M. Piorry, to illustrate some parts of this subject. Among the first series of exciting causes, by which an undue quantity of blood accumulates in the vessels, are all those which tend to the formation of a large quantity of good chyle or blood, especially good air, and diet of too nutritious a nature. But these causes rarely alone produce an excess of circulating fluid; it is when the second series of causes, those which interfere with the proportionate elimination of fluids by the various emunctories come into play, that such an excess occurs, and is followed by serious consequences. It is the latter also which most frequently produce suddenly fatal results. To these may be added a sedentary life, the sudden stoppage of discharges, as hæmorrhoids, and in females the menstrual flux, and the habitual respiration of bad air. M. Piorry believes the latter to be one of the most frequent causes of the accumulation of blood in the vessels.

The word *plethora* having been employed with various significations, M. Andral has adopted the word *polyæmia* to designate the formation of a greater quantity of blood than is necessary for the purposes of nutrition and secretion. M. Piorry uses the word *polyhyperæmia*. General hyperæmia, or sanguine plethora, denotes the same thing. It is that state of the system in which the quantity or volume of the blood contained in the heart and blood vessels, exceeds what is consistent with the due preservation of health. "This may be an idiopathic disease, produced directly, as we have seen, by hygienic causes, or it may be a symptom; but even in the latter case it is of so much importance as to require the special consideration of every practical man."

In simple hyperæmia, or sanguine plethora, the blood is usually rich and thick, and it has *not* an inflammatory crust. According to M. Lecanu its density is great, and it contains a smaller proportion of water, and a greater proportion of clot, which is firmer. In this gentleman's experiments the maximum quantity of fibrin and globules taken together, and the minimum quantity of water was furnished by blood drawn from individuals labouring under local affections, consequent upon plethora. Denis is convinced that in plethoric persons the liquor sanguinis is not less aqueous, but the proportion of globules is augmented. What is a healthy state of blood in this respect for one individual, is not so for another. If the blood of a healthy vigorous person, for instance, with a large chest, but without any symptoms of plethora, were introduced all at once into the vessels of a delicate female, the harmony between the blood and the organs would be interrupted, its quantity would be too much, and its globules too numerous, for the economy, and symptoms of plethora would result. Rich, thick blood, therefore, means, blood too abundant and too much loaded with globules for the constitution of the subject. At the same time, while we admit, from well-ascertained facts, that many of the effects resulting from the quantity of the blood in the system—more or less—depend upon the red corpuscles, a vagueness and obscurity must pervade the whole subject, so long as we continue in total ignorance

as to where or how these corpuscles derive their origin.

In general hyperæmia the force, the frequency, and the sound of the heart's action are interfered with. On percussion this organ appears to be larger than natural; its sound is usually dull, and when the quantity of blood is in great excess, a bruit de soufflet occurs, which is removed by bleeding. The arteries of the extremities are full of blood, and accordingly the pulse is full and large, but this varies greatly in proportion to the original dimensions of the vessels, the quantity of fat, and the volume of the muscles of the limbs, so that there may be a great difference in the pulse of two individuals affected with general hyperæmia; the pulse also may be more or less frequent than natural, but there is no fever. Provided the surface be not cold, and excepting in very fat subjects, the subcutaneous veins are very perceptible and very full, they convey a sense of distension to the touch, and on being emptied by pressure they fill again rapidly; they also collapse but little on keeping a limb elevated for a short time, and are quickly refilled with new blood on replacing it in a horizontal position; the veins of the inferior extremities are easily distended with blood, as happens in pregnancy. The lungs are less sonorous and less elastic, especially posteriorly, and the respiration is short, circumstances which prove that these organs contain more blood than usual. The liver is in general larger than common. When the system is greatly overcharged, on opening a vein the blood runs slowly, and projects but a short distance from the arm, but as the quantity becomes more duly proportioned to the capacity of the vessels, and to the motive powers, it is gradually projected to a greater distance, and the patient, instead of experiencing any morbid effect, is instantaneously relieved by the loss of blood. The mucous membranes, especially of the lips and tongue, are red, and the skin usually of a beautiful rose colour, although it sometimes happens that persons affected with well-marked signs of hyperæmia in the viscera, are nevertheless pale.

General hyperæmia rarely proves fatal without previously exerting some further complication of morbid qualities in the blood, or some local disease; but where death has occurred the blood has been found coagulated and blackish, the heart gorged on both sides, but more particularly on the right. M. Piorry states, that he has observed the latter four times its usual dimensions; the arteries frequently contain much bloody fluid in the part coagulated; the deep and superficial veins are distended; the internal surface of the vessels is sometimes highly coloured or blackish; the capillaries red, more or less inclined to livid; the lungs gorged with blood, particularly at their dependent parts; the liver congested, its volume increased, and affording, on incision, a black fluid blood, easily pressed out as from a sponge; the spleen frequently congested with thick viscid blood; the stomach and intestines deep red externally, but more so internally, especially at those points which are dependent; the integument on which the body lies presents more or less extensive violet or livid sigillations; the cerebral vessels are much distended with blood; the muscles are red. Owing to the abundance of fluids decomposition occurs very rapidly. Add to this that blood is often found extravasated, or serum effused into the various cavities; that the organic tissues penetrated with so much fluid, are frequently soft, and in a manner macerated; and that the bronchial tubes are, for the most part, loaded with bronchial froth, which has been the cause of fatal asphyxia; and you have a tolerably complete history of the phenomena of general hyperæmia.

With these phenomena before us there can be no doubt or surprise, that an excess of blood in the vessels is capable of producing a most extensive range of symptoms and diseases varying according to the mode of its production. The molecular actions in the blood being in excess, the organs become painful, and predisposed to inflammation; it is, in fact, a permanent source of excitation to the solids. When every point is thus over-excited by an excessive supply of blood, the functions of the nervous system become disordered, there are affections of the mental faculties, and of the external senses; the temperature of the surface is elevated, the pulse augmented in strength and frequency, and all the phenomena of fever developed. Andral remarks, that in many of the cases coming under the class of fevers, wherever the blood is distributed derangements of function are found: "In the blood, then, indisputably resides the first cause of the disease, the lesion of the solids is only a secondary affection, but may, notwithstanding, become the predominant one, and give rise to many and formidable accidents." In general hyperæmia, without fever there may be a sense of oppression, and constriction in the region of the heart, palpitations, throbbings, tendency to syncope, beating of the vessels in the head and limbs, dyspnœa on slight exertion, sighs and yawnings, coated tongue, loss of appetite and of thirst, slight or more severe constipation, high coloured and highly animalised urine, weight in the head, headach, vertigo, in fact all those circumstances which, in a limited point of view, are described as the precursory signs of apoplexy. There may be pains in the limbs, pains in the kidneys and groins, resembling in the female those which precede menstruation. According to the sex, age, and organic predisposition of the individual, various local affections are its consequences, and especially congestions. Congestions of the brain, heart,

lungs, and mucous membranes. The dyspnœa, when the lungs are congested, arises from the want of proportion between the blood which requires to be aerated, and the quantity of air inspired; the brain may be the seat of congestion, so violent as to produce death, and leave only a more loaded state of the cerebral vessels, as a trace of the disease. The congestions of the mucous membranes superinduce epistaxis, especially in children, hæmorrhoids in adults, menorrhagia in females and other hæmorrhages. Dropsies and fluxes are among these local results. Andral believes the serous effusions into the cellular tissues and cavities to be the mechanical result of over distension of the vessels, in confirmation of which he cites the experiment of injecting a large quantity of water into the veins of an animal without previous venesection, when these effusions are quickly formed, which is not the case if bleeding has been first resorted to, besides which, dropsies of this description are constantly relieved, if not altogether removed by the lancet. Added to all this, cerebral or pulmonary apoplexy or rupture of the spleen, hypertrophy of organs and tissues, and many other states of disease which either insidiously or suddenly terminate life, are among the innumerable consequences which result from an excess of blood in the circulating system.—Let us now turn our attention to the opposite condition.

General Anæmia.—Polyanæmia.—Deficiency of Blood.—The system cannot suffer a total loss of blood but when a deficiency of the vital fluid arises from hygienic causes, when its origin is unknown, or when it is the result of a pre-existing organic cause, of which the results only remain, it may be regarded as an idiopathic disease. The causes of anæmia may be reduced to two series. 1. Those by which a part of the blood or its elements are lost. 2. Those which prevent the gradual renewal of its ordinary waste. Among the first are hæmorrhages, which may be *rapid*, in which case, if not carried too far, their effects are soon recovered by proper nourishment; or *slow*, the daily loss of blood, for instance, exceeding the proportion of chyle formed, in which case the anæmia occurs gradually. Fluxes more or less rapidly drain the system of its blood. Among the second series of causes may be enumerated insufficient diet, with respect both to quantity and quality, any organic cause which affects directly or indirectly the process of hematosis, but more especially those which interfere with chymification and chylification, as in diseases of the pyloric or cardiac orifices, softening of the stomach, &c., conducing to the formation of bad blood. Dyspepsia may, in the long run, terminate in general anæmia. Exclusion of the sun's rays, and influences conveyed through the nerves, may produce the same effect. Anæmia is also frequently symptomatic, but whether so or not it is the source of the most important indications, it modifies the treatment of local affections, of whatever nature they may be, &c., as in the case of plethora, a knowledge of all which relates to it is of the highest practical importance.

By anæmia, then, is understood a diminution of the mass of the blood; but it commonly happens that, together with diminished quantity, its qualities also are *vitiated*, so that this disease includes various forms of diseased blood at present but little understood. Denis describes anæmic blood as follows:—"Blood in too small a quantity containing too few corpuscles for the constitution of the individual;" and he considers that it depends entirely upon the corpuscles being deficient, and not upon the aqueous part being too abundant. It is deficient in colouring matter, and contains a small proportion of iron, and is usually of a bright rose red tint, but in the worst cases it approaches in appearance to serum. It furnishes a small clot of slight consistency, with a large proportion of serum; and owing to slow and defective contractility, the clot often appears to be larger than it really is; the serum has little colour, and is very transparent, probably it has also a very small proportion of salt. This is the general character of anæmic blood; but sometimes, when the mass of blood is diminished, the proportion of clot is really larger, and that of the serum small, as in cholera, which shows that the mass cannot be considered altogether apart from the qualities, and that these are different, according to the causes producing the deficiency in quantity; in general anæmia, however, properly so called, the blood has the qualities above described, and it is to that we confine our observations at present.

The effects on the system of a diminution of the mass of blood vary with the cause and manner of its production. For a full account of the consequences of blood being directly withdrawn from its vessels, so far as the subject is at present understood, I must refer you to the works of Dr. Marshall Hall. When an outlet is given, and the flow takes place without interruption, the immediate and necessary consequences are a proportional diminution in the power of the heart; and the arteries contracting upon their contents with greater readiness than the veins, their capacity is diminished; the proportion of fluid in the veins to that in the arteries is accordingly increased; the pressure of the blood throughout the system is diminished; absorption or imbibition by the blood-vessels is greatly increased; and the composition of the blood remaining is altered, its salts are increased, and its fibrin diminished in proportion, and it becomes more rapidly coagulable. The more remarkable and the most fatal consequences of loss of blood in this manner are syncope, convulsions,

delirium, or coma, and death in a few minutes; but when the mass of blood is diminished less rapidly, so that death is not produced so immediately, other phenomena occur. The extremities become damp and chilly, the tongue, lips, and cheeks, pale and ghastly, the pulse frequent (140 to 160), small, and intermittent, disappearing at the wrist for a time, and then returning; there is weariness and weight in the limbs, fainting, sighing, and vomiting, and as dissolution approaches the whole body becomes damp and chilly, even the breath becoming cool, the pulse very intermittent, perhaps imperceptible, restlessness, with constant desire for change of position passes into jactitation, and there are deep convulsive gasping sobs, followed by cessation of respiration, and of the action of the heart. Death, from diminution of blood in these degrees, is the occasional result of wounds, accidents, surgical operations, and spontaneous hæmorrhages, and the quantity of blood lost by a healthy individual of moderate weight, before death takes place, has been computed at 8 or 10 pounds. When blood is lost in large quantities, but not sufficient to produce death, the effects are numerous and various, and in whatever manner it may have occurred, whether by accident, blood-letting, or by a continued drain, if the quantity has been considerable with respect to the individual, that state of the system will be produced which is called exhaustion. When this occurs in the young and very old and in feeble persons, most of the phenomena of anæmia, to be described presently, happen, and the patient either gradually recovers or sinks. The state of *sinking* denotes a positive and progressive failure of the vital powers, there is loss of power in the heart, the functions of the brain subside, there is a tendency to dozing or snoring, stertor, blowing of the cheeks, dyspnœa, and crepitus in the lungs, and all the consequences above described, resulting in death. But in vigorous constitutions that state of the system takes place, which has been described by Dr. Marshall Hall, and recognised by the profession as *exhaustion with excessive reaction*; it is formed gradually, and is marked by forcible beating of the heart, aorta, and arteries, and in aggravated cases will proceed to throbbing pain in the head, intolerance of light, or of any kind of disturbance, agitated sleep, noises in the ears, morbid sensations and delirium, hurried respiration, with alternate panting and sighing, and sudden dissolution may be the consequence of muscular effort. The manner in which this reaction is produced is not known, and the usual mode of explaining it is entirely theoretical. But general anæmia or bloodlessness, produced slowly by hygienic causes, or by defect in the processes of hæmatosis, can only be partially understood by the study of the effects of rapid loss of blood. It accordingly requires special consideration.

In anæmia, the force, frequency, and sound of the heart's action is influenced differently, as it may be a recent or an old affection. In the former case the sounds are frequently loud and sharp, and, although the heart is small, they may be heard at a considerable distance; there is irregularity, and even intermittence, palpitation is attended with energetic, tumultuous, sometimes irregular sounds, heard over a confined space; on percussion the organ is found to be diminished in volume. In older cases the sounds may be clear, loud, but variable, and sometimes indescribable; the pulsations are more irregular and the palpitations are feeble, and frequently hardly appreciable; the heart is sometimes still large. Dr. Marshall Hall originally described as follows the peculiar sound or "throb" which occurs as a consequence of emptiness of the blood-vessels:—"The beat of the heart was a throb, accompanied with a whizzing sound." "The arteries partook of the same throbbing character." The pulse is small, the finger being scarcely raised by the expansion of the artery; in extreme cases it is imperceptible. When there is great debility, and the power of the heart is much diminished, the arteries are distended with less blood at each beat, and, in return, their elastic coats react with less force on the blood; thus the cause which renders the motion of the blood in the capillaries continuous, is not in full operation, and the motion of the heart may become perceptible in the capillaries, and thus constitute throbbing. On keeping the arm raised for a short time, the radial artery becomes extremely weak, or scarcely perceptible. The veins are empty, or little developed; if we raise them they collapse, become empty, and fill again very slowly; when emptied by pressure, they are also tardily repleted. The capillaries are remarkable for their discolouration, for their blueish pallor, the skin having a yellowish or rather cadaverous tint, resembling the tissue of the skin, containing no blood. If you compress the wrist in a case of anæmia, so as to retain the blood in the hand, the latter becomes coloured, which forms a strong *contrast* to its former tint. M. Piorry states that this distinguishes general anæmia from *hydrohæmia*, or a watery state of the blood, since in the latter case you may vainly retain the blood in the integuments, these being pale, not from deficiency in quantity, but because the fluid itself is colourless; in simple anæmia the pallor and peculiar tint of the lips are among the first morbid appearances; the deficiency of iron, before mentioned, tends to account for this discolouration. The lungs are extremely sonorous and elastic, and the respiration greatly developed; this, again, is not the case when the blood is watery without being deficient in bulk. At rest, the

respiration, as well as the action of the heart, are often slow, but greatly accelerated on the slightest movement. The mental faculties, for the most part, lose their energy; sometimes there is excitement, as before described; but when this state of the system has advanced far by slow degrees, there is a sort of inertia, from which it is difficult to rouse the individual. At the same time the muscles become feeble, the least exertion fatigues, excites sweat, and disturbs the circulation and respiration; standing produces vertigo and sounds in the ears, superinducing syncope, and alarming cerebro-spinal affections, with occasionally epileptic fits, these symptoms wholly or partially subsiding in a recumbent position; the organs of sense are weakened, amaurotic affections occur, and the eyes have a remarkable expression of languor and weakness, and the sclerotic coat a bluish tint; the liver is small, the secretions contain but little animalized materials, digestion fails. When no food is taken, a deficiency of stools occurs, which it is necessary in practice to distinguish from constipation; the abdomen is very frequently sonorous from distension with gas. Morbid discharges are liable to dry up, the hæmorrhoidal flux will subside, and there is commonly amenorrhœa. The symptoms become more and more severe, they are grouped in a thousand different ways, and terminate after a longer or shorter time, according to the intensity of the cause, and the primitive vigour of the subject. If the anæmia has been rapid, and has proceeded from violent causes, the violent symptoms described precede the death of the patient; if it has been slow, and has proceeded from insidious causes, there is neither râle nor convulsions; but the patient dies, as it were, instantaneously, and most frequently at the moment of assuming an erect position.

On *post-mortem* examination, the blood is found to be in very small quantity, a few ounces only can be collected from the heart, veins, and lungs, and a very small quantity of fluid flows into the chest, on dividing the large vessels; the arteries are empty; the liver, on pressure between the fingers, with the whole portal system, has much less than ordinary. On the contrary, the cerebral vessels contain a considerable quantity of blood. This is accounted for by the cranium being a closed cavity; atmospheric pressure supporting the fluid in it as long as life continues, of course the vessels cannot empty themselves when opened after death, the blood being then wholly or partially coagulated. Hence, deceptive appearances of inflammation of the cerebral membranes; and this circumstance assists in the explanation of some of the before-described effects of deficiency of blood in the system. If recent, the muscles are still red; but colourless if of long standing. There is but little congestion in dependent parts. Putrefaction is slow. The heart may be diminished in volume, but still firm, the left cavities giving to the hand a sense of hardness and remarkable resistance; if the deficiency of blood has existed for a long period before death, it is sometimes still large, but soft and atrophied; there are cases in which it is so soft that it can be easily penetrated with the finger, and it is pale in proportion to the duration of the complaint. In slow anæmia, the tissues and especially the muscles, are remarkably discoloured. In the uncomplicated disease the lungs are extremely pale, flaccid, and of small volume, they are found at the bottom of the thorax against the vertebral column, having lost their elasticity, and little, if at all, crepitant. The bronchial tubes are pale, and the air vesicles and tubes free from froth and mucus; there is scarcely any hypostatic congestion. This state is, however, rare, even in anæmic patients; it is more common to find a small quantity of liquid in the bronchia, forming a froth, which had occasioned partial asphyxia. The liver is small and pale; the stomach and intestines pale and thin, and contain little fluid; the kidneys have little consistence or colour, and the bladder contains clear urine. When anæmia has continued a long time, the brain is far from filling the cavity of the cranium, and in this case the cerebral vessels contain but little blood; the cerebro-spinal fluid being in excess. A considerable quantity of serum is also often found in the serous membrane and in the cellular tissue. This is a condensed account of the effects which are observed to be produced in the organs and tissues by general anæmia or deficiency of blood.

As in the case of general hyperæmia so is it with anæmia, that numerous local diseases are the result. The organs receiving a less supply of blood than common, undergo various modifications of nutrition, whence result atrophy, diminished thickness and consistency of tissues, or their complete decay and total disappearance. When the mass of the blood is deficient, every organ in the body enjoys a less degree of vitality than natural—it no longer receives a supply of that upon which "its existence depends," the *vis vitæ* throughout the whole system is diminished. Dropsies are the frequent termination. In this affection of the blood also, wherein the blood is too poor and too scanty, inflammations are attended with the most alarming symptoms, there is a great tendency to fatal hæmorrhages, and they run into putrescency and mortification, which constitute their deadly termination, not so much from the intensity of the local affection, as from the vitiated condition of the Blood.

Not only is the general mass of blood liable to these alterations, but the quantity of blood circulating in a part may be increased or diminished from analogous causes, and with analogous consequences, constitu-

ting *local* hyperæmias or congestions, and local anæmias.

The blood in the capillaries of the cheek is increased in blushing. That in the skin from violent exercise, or exposure to too high or too low a temperature. Under the influence of passion the conjunctiva becomes red. The presence of a grain of sand may produce redness from a slight degree to that of a violent chemosis. These congestions may occur even when the mass of blood is small in quantity and poor in quality. Several congestions are frequently coexistent as the product of one morbid cause; thus, in scarlatina and measles there is an increased quantity of blood, both in the skin and in the mucous membranes. This local hyperæmia of different parts is one of the most constant effects of poisons absorbed into the blood, or injected into the veins, and it is accordingly observed most constantly in contagious disorders. The quantity of blood in a part may be thus augmented by a contraction of the vessels, the circulation becoming quicker; or by their dilatation, retarding its current; or in the last degree of congestion, by the blood becoming stagnant; or the powers by which the blood is circulated may totally or partially fail, producing an accumulation in parts, called by Andral *passive congestion*, and cited by him to show that we must not place too implicit reliance on the post-mortem appearance of an organ, as a criterion of the nature of a disease. After long protracted disease, the weakened capillaries are no longer capable of overcoming the weight of the blood, from which cause the lung is frequently found gorged. Red patches in the stomach and intestines are the frequent result of passive congestions during life. These kinds of congestions are also frequently found in scurvy and chronic catarrhs. The quantity of blood in parts is also frequently increased by mechanical causes; thus the face becomes quickly congested, when the head is kept dependent, by the effect of simple gravitation. The capillaries of the body may become more or less distended by defect of proportion in the cavities of the heart, or an alteration in their natural capacities. Pressure on the vena portæ may produce congestions of the intestines, and pressure of the venous trunks, elsewhere, congestion in the capillaries beyond them. These and a thousand other instances might be given where increased quantity of blood in a part takes place, producing changes in the colour and consistence of tissues, or morbid exhalations of blood or serum — hæmorrhages and dropsies — sometimes ulceration, gangrene, death. So, also, local diseases may occur, as effects of local anæmias. The obliteration or diminution of the calibre of an artery may be the cause of a tissue not receiving a sufficient supply of blood. Sometimes, after death, not a drop of blood can be detected in a particular part, a state which frequently coincides with softening. An organ accidentally deprived of blood by compression, ligature, or any other mechanical cause, if the circulation be not speedily restored by collateral branches, soon becomes gangrenous, and dies—a direct and unequivocal effect of the absence of *arterial blood*.

There is much that is vague appertaining to this important subject; you will no doubt observe that we have no pathognomonic signs by which to distinguish a state of excess or deficiency of blood in the system. It is by a knowledge and just estimate of the details alone, that we can form our opinions; the present lecture, drawn chiefly from the investigations of Marshall Hall, Andral, Müller and Piorry, contains only a small part of the considerations which relate to it; but it establishes the general principle that we must look for the origin of many diseases, and for the explanation of innumerable symptoms, to the blood, as regards its quantity. Not only do the heroic remedies, *bleeding* and *transfusion*, produce all their effects on the animal economy, by diminishing and increasing the mass of the circulating fluid, but, directly or indirectly, many medicines and classes of medicines act in the same way; so that no man can practise physic rationally and successfully who does not study the effects which are produced by an increase or diminution of the quantity of the blood, and by alterations in its distribution to the organs and tissues. Another consideration at the same time arises, I allude to the mischief which continually results from persons following their own views and opinions in slight ailments; waiting till some organic disease declares itself, before they consult their medical attendant, waiting, in fact, till the mischief is done. The physician by this means is placed in a worse situation than the surgeon; the latter has the alternative left of practising his art as an apology for his science, the former may be skilful enough to detect the existence of a local disease, of a fatal tendency, produced by a long-continued and insidiously-increasing morbid state of the blood; but he cannot extirpate the organ for the cure of the patient. I have avoided those explanations which are based hypothetically upon the nervous system; for has it not also happened that the valetudinarian has been bandied about from one door to another—has been told that all his ailments were NERVOUS, and has ultimately died of a disease, the nature and treatment of which could only by any possibility have been predicated by a critical investigation of the state of the LIVING BLOOD?

MEMOIR ON

THE GIBBON VARIÉ,

WITH A CRITICAL EXAMINATION OF

M. DE BLAINVILLE'S ACCOUNT OF THE GIBBON.

By ROBERT KNOX, *M.D., Edinburgh.*

THE reader will have observed, from the last Number of THE LANCET, that M. De Blainville had completed his Observations on the *ascending scale* of the Simiæ, or African Apes and Monkeys; and the Translator now takes the liberty of placing before the readers of THE LANCET, *first*, a Memoir on the Gibbon Varié, of which he posseses two *authentic* specimens; and *secondly*, Critical Remarks on the present state of our knowledge respecting the Comparative Anatomy of the Orang-Outang and Chimpanzée.

And, first, of the Gibbon.

That M. De Blainville has been extremely brief in his remarks on the history of this interesting class of the quadrumana, the reader will, we think, readily admit. The truth is that M. De Blainville, notwithstanding the extent and magnitude of the Paris collection, finds no small difficulty in procuring such materials as he has pledged himself to use in compiling and composing these truly unique and splendid Lectures. M. De Blainville mentions in a note, p. 212, that he had had an opportunity of examining numerous skeletons of the Gibbon; but their want of *authenticity* rendered them useless to our scientific Author.

The drawing given by the author (*Fig.* 17 p. 211) is admitted to have been by no means perfect; but we beg the reader to recollect, that M. De Blainville has *given his word that his work shall be, in its strictest sense, scientific*, and the illustrative specimens, therefore, are not those which may have *looked best*, but those of which he *knew most*. We are quite aware that the greater number of skeletons to be found in Museums, (more especially in those Museums where the Proprietor is not at the same time the Conservator,) are precisely of the nature of our Author's Gibbon; that is, *composed or made up of a variety of different animals*, in many cases differing not only in species, but sometimes in genera. Thus, we have ourselves seen the trunk of an *Elk* standing on the limbs, and supplied with the pelvis, *of a common Cow!* We have seen the jaws of a young *Dugong* filled with the teeth of a *Horse!* We remember, that a Dr. S., in Edinburgh, once presented the skeleton of a Porpoise to a Dr. C., of Cambridge. *A common mechanic was employed to prepare the skeleton;* and we remember hearing the poor fellow complaining bitterly of having destroyed a skeleton of his own in supplying the deficiencies of that intended for the Museum at Cambridge. The man, by long habit, had reached great perfection in this sort of imposture, so much so indeed that he allowed few things, *in a perfect state*, to pass from his hands. If he had a customer for any part of an animal, such as a pelvis, sections of teeth, &c., he hesitated not a moment in appropriating them, and thus supplying himself with the "Water of life," trusting to some fortunate windfall, or his own ingenuity, for supplying their place. Dr. C., of Cambridge, no doubt received the skeleton; but we trust it was by no means considered *authentic*. M. De Blainville has enabled us to place before the public in a strong light, a principle upon which we have all our lives acted, viz., avoiding the supplying the deficiencies of one skeleton with parts of another. For instance, however it may tend to ornament the skeleton of an elephant to have the tusks *in situ*, yet we hold it strictly *non-scientific*, and a highly improper and dangerous principle, to supply the lost tusks with those of another elephant.

We possess in our own private Museum two skeletons of the Gibbon Varié: one, that of an adult female; the other, that of a young specimen, also a female, and reported to be the offspring of the older specimen. Both specimens had died in India, and were sent to this country preserved in alcohol. These valuable specimens were dissected with the greatest care, and the skeletons prepared by Mr. F. Knox. Had our time permitted we should have liked much to give engravings of these skeletons, as we cannot observe that any authentic and entire specimen has been brought before the public. We copy from our MS. Catalogue a few of the most important measurements, taken, as we invariably take them, by means of a pair of *callipers*, where the surface is round or uneven.

	in.	lin.
Alveolar edge of jaw to occipital tuberosity	4.	6
——— edge of jaw to occipital condyles	3.	3
Length of cervical region	2.	3
——— dorsal region	6.	3
——— lumbar region	3.	4½
——— sacral and coccygeal region	2.	6
Total length of vertebræ, including those of the head	17.	7½

NUMBER OF VERTEBRÆ.

Cervical	7
Dorsal	13
Lumbar	5
Sacral and subsacral	5
Coccygeal, i. e., moveable	5
Total	35

	in.	lin.
Humerus 9. — Radius 10.	6.	
Carpus and Metacarpus 3.	—	
Phalanges of hand.... 3.	3 = 25.	9
Femur....8. 1½ Tibia..	7.	3
Tarsus and Metatarsus	3.	4½
Phalanges of hand.... 2.	4½ = 21.	1½

	in.	lin.
Length of clavicle	3.	9
Scapula, length of axillary margin	3.	4½
Iliac crest to ischiatic tuberosity..	5.	4½
Greatest breadth over iliac bones .	4.	
——— ischiatic tuberosities.....	3.	
——— ——— condyloid cavities	3.	
Antero-posterior diameter of pelvis	4.	4½
Transverse measurement	2.	3
Total length of sternum.....	3.	4½
Breadth of manubrium, or first bone of sternum	1.	3

TEETH.

On each side of each jaw :—

Incisors.....	2
Canine	1
Anterior molars.	2
Principal molars	1
Posterior molars	2

8×8=16×16=32

	in.	lin.
From alveolar edge of jaw, to occipital tuberosity	4.	6
Over zygomatic arches	2.	9
At parietal protuberances.....	2.	4½
Between external angles of frontals	2.	6
——— temporal fossæ	1.	10½
Between external auditory foramina	2.	7½
——— the orbits	—	6
Length of lower jaw from alveolar edge to angle	2.	10½

REMARKS ON THE AGED FEMALE GIBBON.

The sutures connecting the bones of the cranium have already entirely disappeared; no vestige even of the intermaxillary suture remains, and the whole cranium presents a smoothness and freedom of crests, ridges, &c., quite equal to that of the Chimpanzée. The situation and direction of the orbits in this animal are peculiarly human; the limbs are altogether unfitted to walk on the earth's surface as a quadruped; its habitat must be altogether arboreal. The anterior or pectoral limbs, it will be observed from the preceding measurements, are 4 inches 7½ lines longer than the posterior; the greatest difference taking place between the radius and tibia, or forearm and leg properly so called. The animal standing erect like man (supposing it capable of doing so,) would have measured about 2 feet 10 inches.

The pisiform bone in the carpus is proportionally very small, approaching, therefore, the human type more than that of the other Apes lower in the scale. We remarked, during the preparation of the skeleton, that the inter-osseous membrane, between the radius and ulna, consisted of delicate cellular membrane; and that the rotatory powers of the hand must have been very great.

The thoracic sternebræ are three in number; and in this respect, but more particularly in the flattened broad form of these portions, the sternum resembles the human structure so closely, as, we imagine, would deceive most anatomists. There are distinctly seven pairs of sterno-costal cartilages, and these are rather curiously placed, not being at equal distances from each other. The second and third pairs approach each other very closely, and would seem to have originally divided, as it were, the manubrium from the body, i. e. the first from the second sternebra. But we will immediately show, from the examination of the young Gibbon's sternum, that this is not the case, and that a small sternebra is developed, but unites with the manubrium as the animal approaches maturity.

The posterior osseous girdle or pelvis gives, what appears to us, large diameters, the antero-posterior is no less than 4 inches 4½ lines; but we would remark, that this measurement is greatly increased, in consequence of the position of the sacrum, in reference to the symphysis pubis, which is placed much more posteriorly than in man, and thus the line from the sacro-vertebral angle to the symphysis was very oblique. The transverse measurement, however, is also great, and being a fixed one, leads us naturally to inquire into the size of the fœtus at birth. The head of our young Gibbon measures in its greatest length 3 inches 6 lines, by 2.4½ in breadth across, at the parietal protuberances; but what the exact age of this specimen was, we have now, of course, no means of ascertaining; the Osteogeny proves it to have been young, the epiphyses of most of the bones being still separate; the teeth are in the state of the human child at about six years of age. A well-marked *lines innominata* in the adult specimen at once defines the entrance to the true pelvis, and divides it from the false or upper pelvis, which, as will be observed from figure No. 6, p. 302, of the Callitriche, is extremely elongated and open inferiorly in these animals; instead of the iliac fossæ as in man, the osseous surfaces are perfectly smooth, flat, and looking directly downwards, so that a *false* pelvis cannot be said to exist in the Gibbons.

The sacrum presents only three sacral foramina, although we find five vertebræ have united, leaving five coccygeal or moveable vertebræ, being one more than we generally find in man; as we have also a vertebra more in the dorsal region, the total number of spinal vertebræ is thirty-five, whilst in man we reckon only thirty-three. Upon the whole, however, if we consider the general form of the entire spinal column,

the relative proportional size of the bodies of the vertebræ, the arrangement of the spinous processes, the union of five vertebræ to form the sacrum (four of these contributing to form the sacro-iliac articulation), the whole, we repeat, presents an approximation to the human structure of the very closest nature.

We have already alluded to the want of ridges or crests on the surface of the cranium, even in the aged female, where all sutures have nearly disappeared; the measurements also which we have given, particularly the relative extent of the zygomatic arches, brings the whole cranium closely to that of man. In the sternebræ there positively exists no real differences.

REMARKS ON THE YOUNG FEMALE GIBBON.

Teeth, Incisors on each side of each jaw 2
Canine..... 1
Anterior molars 2
Principal molars 1
—6×6=12×12=24

The incisors are much worn, the canines are short, scarcely projecting beyond the dentar line; the first anterior molar is, like that of the human child, smaller than the one which follows, which again is a large tooth, having distinctly two external and two internal tubercles, those in the lower jaw, have a small *fifth* tubercle, placed posteriorly. These, together with the canine and incisors, are deciduous, or milk-teeth, all to be cast, and replaced by permanent teeth; and as curious a point perhaps as there exists in the whole of the phenomena of dentition, the large second anterior molar is replaced (as is seen in the adult female) by a tooth scarcely half its size. This singular fact has been much dwelt upon in human anatomy, and is supposed to be connected with the development of the jaws, many anatomists supposing that the anterior arch of the alveolar edge, not admitting of extension after a certain age, a smaller molar supplying the place of a larger one, will naturally give more room for the increase of the other teeth, that is, the canine and the incisors. However this may be, we certainly observe, that notwithstanding the extreme youth of the specimen, and that all the sutures of the cranium, together with the epiphyses of most of the other bones, remain separate and distinct, yet the symphysis of the chin is as completely obliterated as if it had never existed.

The forehead is exceedingly well raised, the frontal bone being larger proportionally than in man; the proper frontal suture has completely disappeared, as also the anterior and posterior fontanelle, the posterior being filled up as in most human crania with an epactal bone. The great wings of the sphenoid articulate extensively with the parietal; the squamous bone rises high, so as to be on a line with the external angular process of the frontal. The entire cranium holds evidently the same great degree of development over the jaws, as we find takes place in the human subject. The delicacy of the zygomatic arch is striking, and gives different measurements from that of the adult, though even in the aged Gibbon the delicacy of this arch is very remarkable.

MEASUREMENTS OF THE HEAD.

	in.	lin.
From alveolar edge of jaw to occipital tuberosity	3	6
——————— to occipital condyles	2	4½
Between parietal protuberances ..	2	4½
Breadth over zygomatic arches ..	1	10½
Between external angular processes of frontal	1	10½
Breadth in temporal fossæ	1	9
Breadth at root of nose.....		4½
Length of lower jaw from alveolar edge to angle	1	9

The *ossa innominata* are each growing by three separate centres of ossification, viz., an iliac, a pubic, and an ischiatic, meeting in the centre, or nearly in the centre, of the cotyloid cavity, we remark that the ascending ramus of the ischium and descending of the pubis, have already united by bone. The sacrum is perfectly wedge-shaped, and the costal appendages forming the sacro-iliac synchondrosis, distinctly visible, and separate, precisely similarly indeed to the human structure, and of which we have given an engraving page 191.

The sternebræ are in an interesting period of their development. We have six separate and distinct centres of ossification forming six sternebræ; the second uniting with the manubrium or first, and the third, fourth, and fifth uniting together, will precisely give the arrangement of the adult sternum, as seen in fig. 20, page 213.

The limbs give the following measurements:—

	in.	lin.
Humerus 4.9 Radius 5.0 Wrist and Fingers ..... 3.6 .....=13	3	
Femur.. 4.4½ Tibia 3.7½ Ankle and Toes (foot) .. 3.6 .....=11	6	

SPINAL COLUMN.

	in.	lin.	in.	lin.
Cervical region	1.	3		
Dorsal	2.	10½		
Lumbar	1.	7½		
Sacral and coccygeal	1.	7½		
			=7.	4½
Add length from snout to occipital condyles			2.	4½
Total length of the vertebræ, including those of the head.....			9.	9

The animal if put in the erect position, as in the human subject, would have measured 1 foot 4 inches 4 lines. The length of the arm exceeds that of the leg by 1 inch

9 lines, the proportion not being by any means so great as in the adult specimen; showing that the juvenile proportions of those parts remain, or even increase in the adult Gibbon: the reverse of man's economy.

LECTURES

ON THE

ORGANS OF REPRODUCTION IN THE ANIMAL KINGDOM.

DELIVERED IN THE ROYAL COLLEGE OF SURGEONS, LONDON.

By PROFESSOR OWEN, *F.R.S.*

LECTURE V.—APRIL 30, 1840.

BESIDES the forms of generation already spoken of in the preceding lectures, some authors admit another kind, which they call *gemmuliparous;* they suppose the granules which are produced within the cavities of the polypi to be portions of the flesh of the animal, developed and separated from the internal membrane, and afterwards covered with cilia. There exists, however, no proof of this separation, and the researches of Wagner and Farre tend to disprove such supposition; the former physiologist has examined the ova at a very early period, and has found them enclosed in distinct ovisacs, and to contain all the essential parts of the ova of higher animals, viz., the vitellus, germinal sac, and germinal spot.

We next proceed to a higher class, the RADIATA, beginning with the order Acalepha (sea nettles) in which are contained the medusæ, the beröe, and the hydrostatic genera, as the physalia, &c. Our knowledge of the modes of generation in this order are very restricted, and in one genus alone have been fully investigated, viz., in the Medusa; in the *Physalia* the reproductive organs are situated in the midst of the numerous tentacula, which depend from the under part of its sac; in the beautiful little *Velella*, with its pigmy sail, raised upon an oval disk, these organs are found among the tentacula, which hang from the inferior surface of the disk; they resemble tentacula in their form, and have been observed sometimes to contain a whitish, opake fluid, and sometimes ova. The nature of the reproductive organs in the medusa is now well known; in the *Rhizostoma*, one of the commonest species, four distinct openings will be seen upon the under surface of the dome of the animal, and near the base of the tentacula. These openings lead into four generative sacs, guarded by a valve, and separated from the digestive cavity by a thin membrane only; they have hitherto been described, by comparative anatomists, as respiratory cavities; the generative sacs may be easily seen through the transparent and jelly-like structure of the dome-shaped disk; and Ehrenberg has remarked upon the great variety of their disposition in different species; in some they are placed at considerable distances from each other, and in others they lengthen out until they become continuous; the entrance to these sacs is provided with numerous small tentacles, upon which vibratile cilia are placed, which keep up a constant current of fresh sea-water through the cavity; within the sac, when examined in the spring, is a riband-like membrane, which increases in size during the summer, and becomes plicated so as to present a surface of very considerable extent. The researches of Ehrenberg, Rudolph Wagner, and Siebold into the nature of these organs, has led to the discovery, that the Medusæ are diœcious; that within this plicated membrane, in the males, are produced spermatozoa, and in the females true ova of a violet colour; the spermatozoa are disposed within the membrane in a very remarkable manner; they are collected, lying parallel with each other, into small conical masses, each enclosed in a pyriform sac, the apex of the cone being formed by the terminations of their tails, and connected to the surface of the membrane. The mode of propagation in the Medusæ must be the same as in bivalve mollusca and fishes; the generative fluid, with these spermatozoa, must be dispersed in the neighbourhood of the females, so as to impregnate the ova. Gader observed, that during the breeding season, the generative sacs were emptied of their ova, but that there existed numerous small marsupial bags of a pyriform shape appended to the fringes of the tentacula. These marsupia contain from four to six or eight ova in different degrees of development, and are closed on all sides, so that when perfected, they escape into the surrounding medium by means of the rupture of the sac. In this curious disposition we are reminded of the peculiar mode of generation of the marsupial mammalia, and the transition of the ova from the generative sacs to these small marsupial bags is equally mysterious with the passage of the embryo from the uterus of the kangaroo into the marsupial pouch. During this remarkable transit it is known that the ova lose all trace of the germinal sac and spot; they become granular in their contents, and change their colour from violet to yellow; the spermatozoa are expelled from the plicated membrane of the generative sac in the form of a lengthened thread, the base of each

pyriform sac being attached to the apex of the next.

Development of the Ova of Medusæ.—It is a question whether the ovum is at first provided with an external membrane or chorion; it is probable, from a consideration of the changes which it subsequently undergoes, that such is not the case, but that this membrane becomes developed at a later period. In the first instance, Wagner has observed, that the ovum becomes slightly lengthened, and indented at a point which is constant, on one side; this indentation gradually becomes a cleft, which divides the ovum into two equal halves; other fissures are then formed, which subdivide the ovum at first into four portions, then into numerous smaller parts, and, eventually, into a great number of minute granules; the vitelline granules next assume a radiated form, leaving an unoccupied space in the centre, and at the same time an external epithelium, furnished with cilia, is produced, and the ovum commences a rotatory movement. The next change that occurs, is an alteration in colour from violet to yellow, the assumption of an elongated oval shape, and the formation of a slight oral depression at their great extremity. It is in this state that they quit the marsupium, and here we are forcibly reminded of the form and condition of the lower infusoria; in a short time a circular ring begins to be seen around the oval extremity, and short processes, furnished with cilia, are produced from the ring, giving to this stage of the development a close resemblance to the rotiferous infusory. In the next place, the processes developed around the mouth become elongated into eight tentacula, provided with cilia; the mouth communicates with the internal intestinal canal, and the entire embryo has taken on the characters of a polypus, feeding on infusory animalcules and minute forms of its own species. In this state it is probable that the young medusæ sink to the bottom of the sea in shallow situations, and bury themselves in the mud and sand during the winter season, and either continue their growth there, or rise in the spring to complete their adult form. Siebold kept some of these embryos through the winter, but failed in procuring their complete development, a circumstance which cannot be wondered at, when it is recollected that the tadpole is unable to assume its perfect condition in captivity.

In one genus of Acalepha, fixed gemmation takes place, the newly-formed gemmæ assuming the perfect form of the parent, but remaining connected with her and with each other.

Echinodermata.—The echinodermata are completely diœcious, possessing distinct male and female organs, and losing altogether the power of non-sexual reproduction by fission and generation. In the *Asterias*, a ramified digestive sac, with two ramified generative organs, are contained in each ray, and open by two distinct foramina at its base; in the generative sacs of some individuals a whitish granular substance is found in the spring, and spermatozoa in the summer and autumn; in others, ova are discovered in great numbers in the breeding season; in the *Encrinus* and *Comatula*, the generative sacs are more subdivided, and present a lower condition; they are situated in the radiating arms; in the *Echini*, the generative organs are attached to that portion of the internal surface of the shell which is opposite to the mouth; in the echinus esculentus, five lobulated sacs are placed around the anus, which are either ovaries or testes, according to the sex of the individual; they open upon the exterior by means of pores in the shell in this situation; these pores are distinctly seen in the fossil species. If we were to suppose the shell of the echinus to be softened, and the animal drawn out into a vermiform figure, we should then have the organisation of the worm-like *Holothuria*; in this genus the generative organ is a single system of ramified tubes, opening near the mouth of the creature; the remarkable cœcal pouch connected with this apparatus, and which has hitherto been considered a rudimentary testis, has been proved, by the recent careful observation of Rudolph Wagner, to contain no vestige of spermatozoa at any period. It is probably intended to add some substance to the ovum previously to its expulsion; in the *Sipunculus* there are two organs, which are neither ramified nor divided, and are, therefore, simpler than the ramified organ of the holothuria; it is probably diœcious, but new observations are required to ascertain whether, in some individuals, they may contain spermatozoa. At this very early stage of our inquiry into the condition of the generative organs in the lower animals, we cannot but feel some degree of astonishment in discovering distinct sexes, organs of generation as complete as are to be found in many of the higher classes, and that remarkable process in the medusæ which assimilates them in their mode of reproduction with the marsupial mammifera.

PATHOLOGY OF THE BRAIN IN AN IDIOT FROM INFANCY.

To the Editor of The Lancet.

Sir:—Will you oblige me by an insertion of the subjoined case in the columns of your valuable periodical? I am, Sir, your obedient servant,

George Lowther, M.R.C.S.

Kingston-upon-Hull,
April 25, 1840.

On the 27th of December, 1839, I was requested to attend Sarah Oliver Foster, a girl of delicate frame, tall in stature, aged

12 years, and idiotic from infancy. I found her affected with functional disturbance of the chylopoietic system, as indicated by a diarrhœa of several days' duration, which was attended with its usual concomitants, viz., irritability, an accelerated circulation, thirst, disordered digestion, a scanty secretion of urine, and considerable debility. Hitherto she had had nothing administered for the purpose of restraining intestinal action. I ordered a mild thebaic, combined with a moderate astringent, to be given every third hour; farinaceous food and quietude.

28. Intestinal evacuations diminished, and a decided amelioration, in every respect, in the condition of the patient. To continue the mixture as before.

29. Diarrhœa nearly restrained; there is, notwithstanding, great prostration, and a marked inattention to surrounding objects, probably symptomatic of the supervention of cerebral disease. To have a gentle alkaline stimulus, combined with a diuretic, administered every three hours, and an alterative powder at night.

30. Upon my arrival about noon this day I found my patient in *articulo mortis*. An inquiry elicited that a change had occurred about five in the morning. Symptoms of cerebral effusion had slowly supervened, she became gradually comatose, and at about three minutes after my arrival expired.

Autopsy Twenty-four Hours after Death.

The external aspect of the body presented little, if any emaciation. Upon raising the lid of the left eye, which had been strabismal from birth, I perceived that death had produced no change in its obliquity, the pupil was still directed towards the external canthus. The scalp having been reflected anteriorly and posteriorly, I proceeded to measure the denuded skull, which, in consequence of a considerable contraction in its transverse diameter anteriorly, presented, when viewed at the vertex, a remarkable conformation, converging towards the forehead, as a pear does at its apex. The size of the skull, taken externally, is as under:—

Circumference parellel with the upper margin of the helices of the ears, 18 in., 4 lines;

Transverse breadth between each helix of ditto, 10 inches.

A transverse section of the cranium was now made three or four lines above the greater ala of the sphenoid bone, and the calvarium removed. The general aspect of the dura mater presented nothing remarkable, with the following pathological exception:—Protruding from each temporal region of the cerebrum appeared a globular distension of the dura mater, equal to a small orange in size, and sufficiently indicative, from the existing fluctuation, and particularly from the fluid which followed the use of the saw, of a copious effusion of serum from the surface of the serous membrane. The meninges were then raised, and the brain exposed, serum flowing the while in profusion. Glancing at the brain in situ, it was readily perceived that the conformation of the cranium did not correspond with the external contour of the cerebrum. Occupying the site, and occasioned by the non-development of the lateral portions of the anterior lobes, comprising the temporal regions of the cerebrum, and equal in extent to rather more than one-third of each lobe, appeared cavities, readily accounting for the copious collection of serum within the recently-distended membranes. The convexity of the brain was lost, its general external appearance being flattened, blanched, and easily compressed. Preparations having been made for collecting the fluid, I now made a longitudinal incision into the superior part of the right hemisphere, extending from the frontal to the occipital region (fluid following the knife freely), and exposed—not the lateral ventricles, for, anatomically speaking, none existed, unless the entire interior of the brain might be deemed such—but one large cavity, its circumference being bounded by little more than the cineritious substance of the brain. A similar incision, accompanied with an equally abundant effusion, was then made through the left hemisphere, and both sides of the cerebrum compared. Precisely similar appearances presented. Each half of the brain, including both cortical and medullary substance, did not exceed an inch in thickness, and at the occipital region not more than four or five lines. Throughout its entire extent, the internal surface of each hemispherical cavity appeared smooth and shining, and showed not the slightest trace of organic lesion. The medulla oblongata having been divided midway, and the cerebrum and cerebellum removed, the weight of each brain was found to be as follows:—

Weight of cerebrum (drained), 16 ounces 6 drachms;

Ditto of cerebellum (ditto), 6 ounces;

Serum abstracted from the cavities of the hemispheres, 14 ounces;

Ditto from meninges, including loss during cranial trans-section, 6 ounces.

The longitudinal and transverse dimensions of the cranium are also subjoined; these are taken from the inner table:—

Central length from frontal to occipital region, 6 inches 2 lines;

Transverse breadth between the temporal bones, 4 inches 8 lines;

Ditto ditto, over the sphenoid alæ, 3 inches 6 lines.

With the exception of the vessels of the cerebellum, which were in a state of congestion, as seen by a section through its substance, the longitudinal, transverse, and other sinuses, with the various vessels con-

tained within the cranium, manifested a perfectly normal condition.

Remarks.—The patient was an only child, born of healthy parents, at the full period of utero-gestation, after a natural, but difficult and protracted labour. Animation was feeble for several hours immediately succeeding birth. On the third day the child was considerably convulsed; convulsions recurring at irregular intervals during the first two or three months. No lactation. The parents distinctly assert that they have never been accustomed to procure artificial sleep by medicine usually administered for that purpose. The child had nearly attained the 18th month before any indication of the existence of defective development in the cerebral organisation became fully apparent, or, in other words, before symptoms of idiotcy were rendered no longer doubtful. The following are a few of the features peculiar to the child, which do not differ materially, as far as I am aware, from the common characteristics of idiots.

No indication of the effect of external impressions was perceptible until the age of two years, when the child began to articulate a few of the familiar words of infancy. Owing to a remarkable obtuseness of comprehension, great difficulty was experienced in the child's instruction. As a natural consequence, memory was defective; and these peculiarities, in addition to an indistinct articulation, continued during life. As a point in illustration, it is worthy of remark, that the child could not proceed further than the third figure in numerals, nor could she advance beyond the third letter of the alphabet. She was exceedingly passionate. Her susceptibility to the reception of external impressions, through the medium of the several senses, varied greatly in degree. The sense of hearing was singularly acute, as demonstrated by the delight occasioned by musical sounds, even when conveyed from a considerable distance. Taste, smell, and sight stood next in relative succession, and lastly that of touch. A curious circumstance is mentioned by the father, which, in this instance, would tend to denote a temporary absence of perception, no impression being transmitted through the sentient nerves. One evening, whilst seated near the fire, a hot cinder fell upon her stocking, and burnt through to her foot; a subsequent examination discovered that the burning ember had taken effect, but the child was unconscious of its presence, no impression having been transmitted to the sensorium! Like most idiots, whilst in a sitting posture she was incessantly in motion, moving the trunk to and fro; she slept soundly; was always dreadfully afraid of falling. Upon questioning the mother concerning the supposed cause of the child's mental imbecility, she stated, that when advanced in the fifth month of pregnancy, she was greatly alarmed by a rat, which sprung from a closet in her apartment; this is the only information I could elicit. It may be proper to mention that a year prior to her death the child was attacked with epileptic convulsions, from which, in a few days, she gradually recovered.

The therapeutic history of the case is brief, but not altogether uninteresting. The case is clearly confirmatory of a pre-established fact, that disordered action existing in one part of the body may, in an exceedingly susceptible subject, terminate by metastasis, to a remote region, and produce fatal secondary disease. We have here an instance of prolonged chylopoietic derangement, conjoined with diarrhœa, great debility, a rapid circulation, and a delicate proneness to revulsional disease, occurring in an individual of peculiar physical constitution. The disadvantages attending the treatment under such circumstances, will appear at once obvious. Notwithstanding the mild form of the medicinal agents employed, and the gradual manner in which intestinal action was restrained, an accumulation of fluid within the cranium was the result. Here an important question suggests itself: suppose the diarrhœa had been allowed a critical termination, might a different result have been established? or might the tendency to cerebral effusion have been averted or diminished? Had the intestinal evacuations been permitted to cease spontaneously, it is not impossible that the transitional tendency might have been lessened; but when the combined nature of the exciting cause is considered in connection with that of the predisposing, and particularly the general irritability of the system, it could scarcely be expected that the constitutional disturbance would have settled down to the standard of health, exclusive of any cerebral effusion.

The pathological inquiry embraces many points of extreme importance. In the preceding remarks I have inferred, *à priori*, that extravasation was the immediate cause of death, an inference inseparable from a due consideration of that section of the inquiry. I will now endeavour to establish this conclusion upon the only legitimate principles of argument, viz., by means of induction.

In a late volume of THE LANCET* I related a case of persistency of life, during an extensive disorganisation of the right half of the brain. A post-mortem examination showed that nearly two-thirds of one hemisphere were completely destroyed, the interior being simply a continuous cavity, coated with a thick purulent deposit, and containing an isolated, but properly organised tumour, of considerable magnitude. With the exception of a few ounces of fluid contained within its lateral ventricle, the left

* Vol. I. 1838-9.

hemisphere was perfectly normal. In this case I proved, from what I considered to be incontrovertible facts, that the individual's mental and physical capabilities (with the exception of an occasional epileptic attack) had remained unimpaired, notwithstanding this extensive organic lesion, and that the collection of serum within the left lateral ventricle was the proximate cause of death. The inference deduced from the narrated facts was this: "That disease in one hemisphere only is not incompatible with the continuance of physical or intellectual life; but if both are affected simultaneously vitality ceases."

Upon a comparison of the morbid appearances presented in each case, we shall discover an essential difference in their pathology. In the case just referred to, *one* hemisphere *only* is extensively destroyed; in the present case *both* would appear nearly obliterated; so that the inference drawn from the former case would appear to admit of considerable deviation, when applied to the facts recorded in the latter. From each, however, a similar conclusion may be deduced, as will be seen in the sequel.

In the autopsy to the present case, it is stated that the interior of each hemisphere appeared smooth and shining, and showed no trace of disorganisation, a circumstance, in my opinion, amply demonstrative that the non-development of structure was congenital. Strabismus is acknowledged to be symptomatic of ventricular effusion, an obliquity of the pupil existed from birth; hence it is fair to infer, that dropsy of one-half of the brain at least must have been also congenital. Possibly the defective organisation may be imagined to be merely the result of absorption, consequent upon chronic hydrocephalus; yet what are the facts? Only admit that organisation may have been arrested by the fright mentioned by the mother, and the opinion is strengthened by the absence of the lateral portions of the anterior lobes, and confirmed by the existence of infantile idiotcy; facts entirely subversive of the supposition that the apparent defective development might be simply the result of structural absorption.

That physical existence was protracted during a period of twelve years, under circumstances highly unfavourable to its continuance, I have attempted to prove by the foregoing facts. It now remains to ascertain the immediate cause of death; and to what cause are we to ascribe the cessation of life? The principal morbid appearances were an accumulation of serum within the hemisphere and the dura mater on both sides. Congenital strabismus has been adduced to prove that dropsy of one hemisphere must have existed from birth; yet an obliquity of the eyeball is not an inseparable attendant upon chronic hydrocephalus, as many recorded cases sufficiently testify; and as the internal condition of each hemisphere was pathologically the same, there is no reason to believe that an extravasation in both cerebral cavities may not have occurred simultaneously.

From a review of the preceding, the following conclusion may be drawn:—That meningeal effusion, as indicated by coma, immediately preceded death; that congenital non-development, with congenital effusion in each cerebral hemisphere, when combined with meningeal effusion *on both sides* of the brain, may become destructive to life, the former by operating as the predisposing, and the latter as the proximate cause of death.

Death, therefore, in both instances, would seem to be referrible to the same cause, viz., compression by extravasation, each hemisphere being affected simultaneously. The two cases are dissimilar *only* as it concerns their predisposing cause, insomuch as a comparison clearly proves, that vitality is far less endangered by an arrest of organisation than by organic disease, confirming the pre-established principle, that an important difference may exist with reference to their relative agency upon life, between non-development of structure and structural disease.

The physiological and metaphysical departments comprise a wide field for inquiry. The subject has already extended a greater length than was anticipated, therefore several facts in my possession, illustrative of the effects of mental emotions upon the child *in utero*, shall be kept in reserve, as they may form a communication for some future occasion.

VIOLATION OF A CHILD.—Anne Hall, aged eleven months, was violated by a private soldier, named Andrew Hume. Examined by Mr. Kingsley, surgeon to the Templemore Fever Hospital and Dispensary, two or three days after the commission of the crime; the prisoner was found to have the penis small, and the glans slightly excoriated. "The whole of the external genitals (of the child) were found in a torn state, viz., the perineum very much so, as were also the labia minora, and adjoining mucous membrane of the labia majora and the clitoris; in fact, the whole of the vulva, or genital fissure, presented a large, lacerated wound, in a high state of inflammation: the child was in a state of collapse, and died a few hours after my visit, having survived the injuries inflicted on her, only thirty hours." On a post-mortem examination, the vagina was found "very much dilated, and longer than natural; its extremity was torn from its attachment to the neck of the womb posteriorly, leaving a large torn opening between the uterus and rectum directly into the cavity of the abdomen, where a quantity of bloody serum was effused".—*Dublin Medical Press*, April 22, 1840.

IRRITABLE UTERUS

SUCCESSFULLY TREATED WITH BELLADONNA.

To the Editor of THE LANCET.

SIR:—I am induced to offer a few remarks on irritable uterus, from having seen, in your last Number, the report of a clinical lecture delivered by Dr. Ingleby, at the Birmingham School, wherein he begins by stating that he differs from Dr. Gooch with regard to the disease being altogether of a neuralgic character. From what I have seen myself, and heard from others, I think he gives an entirely spurious and complicated form, different from that described by Dr. Gooch, page 310, and latterly followed by Dr. Churchill, in his work on "Diseases of Females," page 122; and is clearly describing a mixed case of chronic inflammation of the uterus, attended with pains, simulating in some degree the above troublesome affection. He also gives cases wherein tumours produced pain of the same description that foreign bodies generally do. In this light I think we may look upon them as acting in the present instance, particularly when existing in a part so well supplied with nerves, and so exceedingly sensible as is this organ. Various dislocations produce a like effect. In the first place, in cases of irritable uterus, we find, upon examination, that the mouth may be tender to the touch, and slightly swollen, but not, however, evincing organic change (as Dr. Churchill says) by being hard or indurated. These cases are merely the exceptions to a general rule, as the parts are more generally found in their natural state than otherwise. We find, by analogy, that parts having a large supply of nerves are better supplied with blood than others; may not the congested state, therefore, be rather accounted for in this way, if we admit that a greater determination of blood will exist towards a part which has increased sensibility? The treatment adopted in some cases which I have seen, will, I think, prove, that treating the disease as if it depended on chronic inflammation was attended with danger to the patient, loss of time, and increase of the pain, &c.

The first case was a lady having a large family, aged 35 years, of nervous temperament and delicate constitution, who referred the commencement of her attack to exposure to cold after her accouchement. She complained of pain of an excruciating description in the pubic region, with uneasy sensations about the rectum, and pain in the small of the back; there was no discharge of an unhealthy kind from the vagina; she could not, when lying, which was nearly her constant posture, bear the clothes to touch this region, yet steady pressure with the palm of the hand gave relief after being continued for a few minutes. Her general health was good; bowels somewhat costive; tongue clean, and surface cool; the pulse as usual. She had been treated before I saw her by leeches, dry cupping, anodyne injections, and with opium suppositories, as the stomach would not bear opium in any form. Internally the different preparations of iron were exhibited, all without the slightest relief, with the exception of the opium, which procured some sleep for the patient, but that only when administered in large quantities by the means above mentioned. Knowing these had failed, as also warm hip-bath, I advised belladonna to be applied in the form of a plaster to the pubic region, with rest in the recumbent position. Relief was experienced by this application, which completely removed the pain, and the patient was able to drive out in a few days supported on pillows. Under this treatment, with the addition of tonics, quinine in mixture, and the sulphate of iron in pill, she completely regained her health. I have also seen some other cases nearly similar to the above, in which, upon vaginal examination with the speculum, and by the touch, no abnormal state could be detected. The same means were tried, with success, in some cases, increasing the power of the belladonna by applying small blisters and dressing the surface with an ointment of the extract mixed with lard.

For the last case I shall give, I am indebted to a friend; it is as follows:—A lady, 26 years old, five years married, and without children, shortly after marriage had occasional attacks of pain, alternating with slight remissions. After some time she had slight leucorrhœal discharge, her health in other respects being but little impaired, and the menses being at this time pretty regular. After about six months she became gradually worse, the pains were constant, and the discharge very troublesome, excepting during the period of the menses, when the pains were increased, but the discharge disappeared; she was at this time treated by some gentlemen of acknowledged merit. She went on, however, from bad to worse, menorrhagia occurred every fortnight, and the leucorrhœal discharge increased; all the usual means were tried in vain. My friend was called in at this period, and found, upon examination, that the os uteri was swollen; this had only existed for a few weeks, as one of the gentlemen, in attendance before, had satisfied himself that the uterus was in its natural state; leeches were applied, but with an increase in all the symptoms. Mercury was exhibited in small doses, with opium in large and frequently administered doses, in order to procure some sleep. An injection, composed of acetate of lead and opium, was used for the discharge, which checked it, but increased the pain to an alarming degree.

The menorrhagia was profuse, and the patient's strength sinking very fast, cold applications, acids, kino, lead, were all tried in vain to arrest the flooding. The uterus was attacked with pains like those of parturition, and ergot of rye was used as a last resource, in five grain doses every fourth hour, with success, the menorrhagia ceasing instantly. As pressure relieved the pain, a bandage of large size was applied around the abdomen. My friend was then led to use the emplastrum belladonnæ, from seeing it recommended strongly in Dr. Churchill's work; it had in this, as in the other case, an immediate effect: the patient is now (two years since) quite well, and travelling. I hope this last case will be useful in a double point of view, as showing the beneficial effects of the ergot in menorrhagia, when other remedies have failed, and as proving that treatment directed by the supposition of the inflammatory character of the disease is useless, and even hurtful; the relief afforded to the patient by the use of the belladonna, should also be borne in mind. I am, Sir, a constant reader of your Journal.

MEDICUS.

DEATH AND AUTOPSY OF GENERAL CORDOVA.

To the Editor of THE LANCET.

SIR:—Should the following account of the post-mortem examination of General Cordova, an officer whose name has of late years been much before the public, be deemed worthy of a place in your valuable Periodical, it is much at your service. I have the honour to be, Sir, your obedient servant,

L. T. CUNNINGHAM.

Her Majesty's ship Donegal,
Lisbon, May 4, 1840.

General Cordova, it would appear, suffered most severely from what his medical men called dyspepsia for the last eight years, which rendered his life very miserable, and reduced him to a mere skeleton. About three weeks since, when on the eve of departure for England, he was seized with symptoms resembling enteritis, which were treated actively enough by Dr. B., a celebrated physician here; but, from his extreme debility, and his apathy as regards life (in fact, he wished to die), he gradually sank and expired, after much suffering, on the morning of the 29th ultimo, in, I believe, his 42nd year.

Autopsy Twenty-four Hours after Death.

The external appearance presented an extreme degree of emaciation, with sores in the sacral region, which were nearly in a state of gangrene, and were surrounded by a livid appearance, extending along the back.

On laying open the thorax and the abdomen, which was done (Portuguese fashion) by making an oblong circular incision from the anterior and superior spinous process of the ilium, across the pubes, and then upwards to the clavicle, dividing the ribs at about their centre (a tedious process, but an excellent one for exposing the thoracic and abdominal organs); the peritoneum was found highly inflamed, and agglutinated to the intestines throughout, forming five distinct cavities, which did not communicate with each other, and contained upwards of a gallon of sero-purulent fluid, of a whitish-chocolate colour, and very fœtid. There were also large flakes of false membrane, particularly on the under surface of the diaphragm. The liver was very large, but normal. The mesenteric glands were in a state of suppuration. The stomach was empty, and thicker than natural, with an inflammatory blush extending around the cardiac orifice. The pyloric orifice was surrounded by a cancerous tumour, extending for some distance into the duodenum, which accounted very satisfactorily for the long and truly distressing dyspeptic symptoms. The mucous membrane of the intestines was not so much inflamed as was expected. The spleen was very small, and of a whitish hue. The pancreas, kidneys, and bladder were healthy. The œsophagus, at its lower third, was coated with a firm black pigmentary layer, which resisted the scalpel and washing. The thoracic viscera were normal. The head was opened, to remove the brain for the purpose of embalming; it was large, very firm, and healthy.

CASTRATION FOR VARICOCELE.

To the Editor of THE LANCET.

SIR:—A case, headed "Castration for Varicocele," occurs in your current Number, April 18th, to which is appended the signature of Mr. Moses Thompson, one of the medical practitioners of this place; and as it is very generally known here that the patient was in the first instance under my care, I trust that your usual impartiality and sense of justice, will permit me to detail the practice I considered myself bound to adopt.

I first saw the patient three years ago; the disease having been closely watched during that interval, it was found to remain nearly stationary. At that period (and the same description will answer up to the date of its removal) there was a slight varicose enlargement of the upper portion of the epididymis of the left side, some pain, but not of such exhausting character as materially

to interfere with sleep, digestion, or attention to business. In fact, the account given by Mr. Thompson is substantially correct, "the disease presenting nothing but the ordinary characteristics of varicocele, *being of small size.*"

A suspensory bandage, the application of leeches, muriate of ammonia, oak bark in the form of lotion, and, as an internal remedy, the hydriodate of potassa, formed the principal outlines of treatment. Subsequently, at the suggestion of another practioner, blisters were applied over the enlargement.

It is out of my power to ascertain how the patient acquired the wish to submit to castration. I know that he consulted Mr. Turner, Professor of Anatomy and Surgery at the Royal Medical School in Manchester, and one of the Surgeons to the Hospital in that town. In reference to his opinion, Mr. Turner, having carefully examined the parts, forwarded me a letter (which, for your satisfaction, I enclose), commencing thus:—"I should say that the surgeon who contemplated the removal of the bearer's testis deserved to be castrated for his folly. You know as well as I do that the case is pure varicocele; and, therefore, you have done right to discountenance an operation."

The use of astringent washes, and the suspensory bandage, is the sum of the treatment recommended by Mr. Turner. I saw and examined the patient a few evenings previous to the operation, and he then stated he had *no pain* excepting after a long walk, or violent exercise. Judge, then, of my surprise, when, on seeing the operation of castration reported in THE LANCET, it was stated, that "on examination the testicle was found to be healthy, and of the ordinary size;" and that there existed no peculiarity in the condition of the vessels of the cord beyond the usual character of varicocele, of a very trifling magnitude. I remain, Sir, very respectfully yours,

BARNES VAUGHAN, M.D. M.R.C.S.

Staleybridge, April 30, 1840.

POISONING BY ARSENIC.—M. Orfila detailed to the Royal Academy of Medicine, on the 17th of March, the results of two experiments with arsenic. In the first, he injected twelve grains of arsenious acid into the stomach of a dog. The animal survived an hour and a half; the poison was detected in considerable quantity in the different viscera, but none was found in the urine. In the second experiment, two grains were introduced into the thigh of a dog; the animal died in thirty-six hours, and arsenic was found both in the different viscera and in the urine.—*Archives Générales de Médicine*, April, 1840.

THE LANCET.

London, Saturday, May 16, 1840.

We have been favoured with a pamphlet, entitled "Some Farewell Remarks concerning a Clinical Hospital, dedicated, without permission, to Mr. WILLIAM SANDS COX, and his scientific and humane supporter, by their most humble and obedient servant, "*A Lover of Truth and Charity.*" The "Lover of Truth and Charity" is understood to be Mr. HODGSON, of Birmingham. If we are indebted to the author for the presentation of his pamphlet, we beg him to accept of our grateful thanks, as well for the gift as for the flattering testimony which he has borne to the merits of THE LANCET.

In taking up this pamphlet we plunge *in medias res*; it is the second by the same author, and replies and rejoinders have appeared on the other side; to one of which, by a "Friend of Humanity and Science," the "Farewell Remarks" of the "Lover of Truth and Charity" are especially addressed. We take the latter by necessity for our guide in the controversy, and hence run some risk of presenting our readers with an *ex parte* statement.

Birmingham contains an infirmary, and a medical school. The medical school was founded by Mr. W. SANDS COX, and is understood to be one of the most successful provincial schools of the day. The Birmingham Infirmary is like many other provincial infirmaries. During the last ten years it has contained, on an average, 146 patients. In the winter, the applications for admission have been numerous, and at times 20 more patients than beds have been in the hospital. This was, no doubt, an evil; but Mr. HODGSON observes, qualifyingly, that *two patients* are never allowed *to sleep together* unless it be previously ascertained that *no disease can, by possibility, be communicated from one to the other.* "It is well known," the Friend of Humanity remarks, "that, from the situation "of the hospital, from various nuisances,

"and from other causes, *erysipelas prevails in "the wards at times to an alarming extent*," to which the "Lover of Charity" replies, that contagious erysipelas did occur in the hospital in 1835, but that of late years only isolated cases, *dependant upon wounds*, have been witnessed.

Mr. HODGSON appears to have felt persuaded for some time that the hospital accommodation is insufficient. He has frequently brought propositions to that effect before the Board, and he has supported them by referring to the preceding facts. In his present pamphlet he states, more in the spirit of a "Lover of Truth," it must be confessed, than of a "Lover of Charity," that he was influenced, "probably, by another principle, *i. e.*, that "when so small an increase in the number "of beds was required, another charity was "uncalled for." He urged other reasons before the Board, but he was really actuated by the desire to prevent the establishment of a *rival* charity. The candour of the admission is highly becoming of the name, we will not say the character, which he has assumed.

The establishment of a clinical hospital has, nevertheless, been agitated in Birmingham. The proposal originated with the Reverend Chancellor LAW, the "generous "and munificent patron of the Royal School "of Medicine." The Chancellor "offered "his purse to an unlimited extent, for the "purpose of carrying this design into exe-"cution." The Chancellor LAW has a generous mind as well as a long purse. His benevolence is apparently governed by enlightened views, and on looking out for the objects of his patronage he has happily fallen upon medical science, which contains in itself the seeds of more extensive benefits to mankind than any other department of human inquiry. Few philanthropists yet see this. Honour, then, and the meed of just praise, is due to the Reverend Chancellor LAW, who has had the perspicacity to discern this truth, and has exerted himself to encourage clinical medicine.

We have frequently expressed doubts as to the utility of hospitals, excepting in a qualified sense, and under peculiar circumstances. If the Poor could be attended at their own dwellings, and the money expended in the erection of buildings were judiciously employed to promote the warming, ventilation, and cleanliness of their rooms, to provide them with clothing or linen, and to supply them in sickness with the necessary diet or remedies, and the advice of the qualified Medical Practitioners of the district, the mortality would, we believe, be less than it is in hospitals. The patients would recover more rapidly, and many afflicted persons would be restored to their families, who now fall victims to erysipelas, purulent absorption, and other maladies.

The utility of clinical hospitals is, however, unquestionable. The treatment is carried on under the surveillance of a critical audience. The student has access to a number of facts, which the place affords him every opportunity of comparing, and following through all their phases. Case-books are kept, and the registers embody a mass of authentic observations, which, in the hands of the skilful, become the materials of improvement and discovery.

With the general objections which we entertain to hospitals, as they are at present conducted, we see no just reason why the establishment of a *clinical* infirmary should be opposed in Birmingham. The "Lover of Truth and Charity" sees differently. He is an uncompromising friend of hospitals; he has no compunctious visitings after having seen more than one epidemic sweep through the wards under his care; he is a "Lover of Charity," but he is no Turk, and has not grace enough to love more than one Charity at a time, and one hospital,—the General Hospital of Birmingham, to which he has been devotedly attached for many years.

The patients are crowded in the General Hospital. It does not contain enough cubic space for 100 patients, though 175 have frequently breathed within its walls. No disinterested person can question the pro-

priety of separating the patients. A considerable number of subscribers should abandon the old building. Instead of enlarging it, another hospital, in a healthier place, and on the other side of the town, should be erected. This would facilitate the reception of accidents and severe cases; the services of a greater number of medical officers would be secured, and the rivalry in successful treatment, in the investigation of diseases, and in clinical instruction, would be a public benefit. Mr. HODGSON remains unconvinced. His objections are curious, and the reasonings are too interesting to lie buried in the oblivion of his "Farewell Remarks."

His first grave objection to the Clinical Hospital is, that the proposal for its establishment did not originate *in August*, 1839, *but in March*, 1839,—*five months previously* (the "Lover's" own italics). The second objection leads to the third, which convicts Mr. Cox of "brilliant reasoning," when he asserted that it was an imperative obligation to render the system of instruction at the school as perfect as possible, and that, therefore, a clinical infirmary was indispensably required. Mr. HODGSON throws logical sand in the eyes of his adversaries, "Mr. COX and his satellite," and entreats them to study LINDLEY MURRAY'S Grammar. Fourthly, and more formidably, in reply to the "Friend of Humanity," who unhandsomely said that "the lectures given "by Mr. HODGSON were delivered *seven* "years ago," Mr. HODGSON does not deny this in his pamphlet, but writes, —"He reminds us of some vile spe- "cimen of humanity, who, after receiving "numberless advantages, utters, in the "fulness of his heart, one faint exclamation "of thankfulness; but, when the benefits "are discontinued, the solitary spark of "gratitude is extinguished, never to be "rekindled; 'as the flower of the field, so "'it flourisheth, for the wind passeth over "'it and it is gone, and the place thereof "'shall know it no more.'"

We can scarcely go on with the analysis. These figures of rhetoric, the "vile specimen," the cruel "spark" that never *will be* re-kindled, and the "flower of the field," are absolutely oppressive, in their combined effect. But the "Fifthly" is an important head; we will endeavour to do justice to Mr. HODGSON'S "fifthly;" yet the "fourthly" compels us to remark, that in penning any future pamphlet, Mr. HODGSON would do well to appeal less frequently to the *pity* of his readers.

The force of these objections, which occupy the greater part of the pamphlet, must be felt. Is it necessary to recapitulate them? What is their drift? Could they have weighed as the dust in the balance, on Mr. HODGSON'S own mind? Are they arguments? The "Friend of Humanity" appealed to his liberality, and attempted, very uncandidly, to cheat the "Lover of Truth and Charity" into justice, by analogy; but the "Lover" was wide awake. If Mr. HODGSON is to be cheated into anything, it is neither into justice nor generosity to his rivals. No; he is not that man. The argument trickles down his invulnerable scales thus:—

"Our humane friend enumerates several gentlemen as donors to the the King's College Clinical Hospital, who, to use his own words, are members of the profession, although attached to other institutions, nobly aiding a sister Charity. We can furnish ample reason for this apparent anomaly. All of them are interested in the success of the College, and all are, to a greater or less extent, connected with it. Sir A. Cooper, Sir H. Halford, Sir B. Brodie, and Mr. J. Green—who was formerly Lecturer on Surgery in the College—are members of the Council. Dr. Watson has been their Lecturer on Medicine, and does not resign his office until the completion of the present session, when he receives the appointment of Consulting Physician to the King's College Clinical Hospital. Thus is a solution of the problem readily supplied, and we can now appreciate the *motives by which the donations of the gentlemen referred to have been dictated.*"

Now for the fifth reason against the establishment of a Clinical Hospital. Mr. HODGSON is surgeon to the General Hospital. The London University demands certificates of attendance on *surgical clinical instruction*; the London College of Surgeons

requires certificates of attendance during *three years* on the practice of surgery at an hospital. The fees, which are levied upon surgical dressers at the Birmingham General Hospital, are £31 10s the first year, £21 the second year, and £10 10s the third year; each dresser that remains three years pays Mr. Hodgson and his colleagues *sixty guineas*. Under the old regulations of the College of Surgeons, when the ordinary period of a dressership was 12 months, the fee was 30 guineas per annum; but since the College has required certificates of three years' attendance, the fees have been considerably modified, and stand at 30, and 20, and 10 guineas.

The "Lover of Truth and Charity" has laid little stress upon the fifth reason against the establishment of a Clinical Hospital. It is due to him, however, to state, that the pamphlet distinctly shows that the fifth reason has the first place in his mind, and the deepest in his heart. Sixty guineas! The guineas would be lost if the Clinical Hospital were founded. The guineas were, it is to be feared, the generous source of the pamphlet's inspiration.

The "Friend of Humanity" declared that the high fee demanded at the General Hospital was an insuperable obstacle to the admission of many pupils. The hospital contains 146 patients; the number of dresserships is not stated. Mr. Cox says, that thirty-eight are now wanted. Mr. Hodgson affirms that *eleven* of the delayed pupils may be immediately accommodated with dresserships. After due allowance has been made for physicians' patients, the number to each dresser cannot be numerous; yet from each *sixty guineas* is demanded.

On what grounds, we are bound to ask our flatterer, Mr. Hodgson, are sixty guineas demanded from the pupils of the hospital? Is it for looking at the sick poor supported by the charity of the citizens of Birmingham? Is it for being allowed to adjust splints, to bleed, to draw teeth, or to apply rollers and plasters, that the pupils are expected to sink sixty guineas? Is it for the privilege of seeing Mr. Hodgson walk through the wards weekly? Or is it for the clinical instruction, which he had engaged to give, that the pupils paid sixty guineas, when the fees for perpetual attendance on any course of surgical lectures in London do not exceed seven guineas?

The clinical lectures are the sole pretext upon which sixty guineas can be demanded; it would be idle to call them a justification of the demand. How, then, does it happen that Mr. Hodgson has received his share of the fees, and *has never delivered a course of clinical lectures during the last* SEVEN YEARS? The law punishes theft; it punishes forgery; it pursues the abstracter of money under false pretences; the swindler falls under its lash; but if a Professor (that prophetic word for a man who *professes* to teach) undertake to give clinical instruction, engage to teach surgery, and receive sixty guineas from the pupil on that ground, yet neglect his duty, impart no instruction, and escape the condign punishment of the law, we put it to a "Lover of Truth and Charity," whether he can be morally acquitted of crime in the estimation of public opinion?

The "Lover of Truth and Justice" is not satisfied with the sixty guineas. The students are not sufficiently grateful to their instructors. He thus assails the character of the medical students of Birmingham in his pamphlet:—

"To test the accuracy of these 'unfounded charges,' we need only revert to an account of a *foot steeple chase* performed by the Birmingham medical students, (students a non studendo) published in *Bell's Life in London*, during the year 1838;—to an examination of three of these ingenuous youths, before the Magistrates of this Borough, for poisoning fowl with a powerful preparation of St. Ignatius's Bean, reported in the Birmingham Journal a few months ago,—to the detection of three of them in the laboratory of the hospital, luxuriating in the matutinal refreshment of ale and cigars, at a time when they should have been attending to their studies as dressers—to the numerous complaints of their gross conduct and indecent language, whilst congregated in the porch of the medical school. These are matters of public notoriety, and are, therefore, selected as illustrations."

If the facts be correctly stated, the application of them to the medical students as a body is a cruel calumny. The attempt to blacken them in the eyes of the people of Birmingham, comes, at any rate, with a bad grace from a man who has, perhaps, derived sixty guineas from each of "the students a non studendo;" has not delivered a clinical lecture for the last seven years, and yet dares subscribe himself "A Lover of Truth and Charity!" The Lover! The writer of Farewells! Why, he has violated "Truth" twenty times, and has shown "Charity" no mercy in his envious, querulous, contaminated pages. When a man is dead to science, he may live to virtue. Mr. HODGSON'S pamphlets are moral suicides; for he had some reputation before, where he was personally unknown.

A worse pamphlet, in a worse cause, was, perhaps, never produced. We state this opinion candidly, as we are bound to do, in acknowledgment of Mr. HODGSON'S flattering recognition of the fearless justice of THE LANCET. Another pamphlet, in the same spirit, will drive hundreds of subscribers from the hospital; *this* will have laid the foundation of the Clinical Infirmary. The advantages to the public in Birmingham of two hospitals over one overgrown monopoly, are demonstrated by Mr. HODGSON.

In the management of the Clinical Infirmary let us hope that no attempt at the extortion of extravagant fees will be made; the clinical lecturers should be paid as other lecturers are paid, in proportion to their services; the medical officers should be paid salaries; and the rigid performance of their duty should be exacted, in justice to the patients, the students, and the medical character.

APOTHECARIES' HALL LATIN.

To the Editor.—SIR:—Pray advise the antiquated crones of Gallipot Hall to revise their labels, some evening, in place of picking faults in the critical readings of young men on exploded medical theories and barbarous practices. For instance, they issue from their shop in Blackfriars, bottles labelled pulvis rhœi, tinctura hyosciami, morphiæ acetatis, aq. distillatæ, &c. Yours most elegantly,

OPIFERQUEPERORBENDICOR.

MEDICAL REFORM PETITIONS TO THE HOUSE OF COMMONS.

MR. WAKLEY has presented to the House of Commons a petition signed by 82 MEDICAL STUDENTS of the University and Extra-Academical Schools of EDINBURGH, praying for a measure of Medical Reform, which, amongst other benefits, shall ensure an uniformity of examination for candidates for medical diplomas, and equalise the rights and privileges of all medical practitioners throughout England, Scotland, and Ireland.

Also one from Messrs. J. and R. COUCH, Surgeons, of POLPERRO, Cornwall, praying the House to pass a Bill for "the consolidation of the medical profession into one representative Faculty," for the regulation and government of all its members, and secure to them all equal rights and privileges.

Also, from the medical practitioners of BLAISGOURIE, in Perthshire, containing a similar prayer.

Mr. ORD, M.P., has presented a petition from the Medical and Surgical Society of NEWCASTLE-UPON-TYNE (consisting of 56 members) praying the House to confer on the profession a sound and efficient legal organisation, which will protect its interests and promote the public welfare, ensuring uniformity of examination for all who desire to enter it, and bestow reciprocal privileges on behalf of all British practitioners.

Mr. RUNDLE, M.P., has presented a petition from the medical practitioners of TAVISTOCK, praying the House of Commons to direct that a Bill may be passed as speedily as possible for the consolidation of the profession into one representative Faculty for the regulation and government of its members, conferring equal rights and privileges on them all.

Sir HENRY PARNELL has presented to the House a petition from the EASTERN MEDICAL ASSOCIATION OF SCOTLAND (consisting of 74 members) praying for the establishment of a representative National Faculty of Medicine.

Mr. FRENCH, M.P., has presented a similar petition from the medical practitioners residing at EXMOUTH and its vicinity (Devon).

Mr. BROADLEY, M.P., has presented a petition from the medical practitioners of KINGSTON-UPON-HULL and its vicinity, praying for a thorough reform of all our medical laws.

Mr. BEAMISH, M.P., has presented to the House of Commons a petition from Drs. P. A. and C. Armstrong, and D. E. Stockey, of BEREHAVEN, Cork, in favour of the immediate adoption of "such steps as may seem best fitted for checking the indiscriminate inoculation with the matter of small-pox."

Mr. Chapman, M.P., has presented a petition from Drs. Campbell, Loy, and Merryweather, and numerous other physicians and surgeons of Whitby, in Yorkshire, complaining of the anomalous state of medical law, the worthlessness of the existing medical corporations, and collegiate and chartered institutions, and of the inefficiency of their examinations of candidates for diplomas and licences, and praying that a sound medical constitution may be granted for the government and regulation of the profession.

Lord Morpeth, M.P., has presented a petition from the Governor and Company of the Apothecaries' Hall of Ireland, "hailing with pleasure" the introduction of the Vaccination Extension Bill, and praying that it may be passed into a law as a measure for promoting vaccine inoculation.

Lord Morpeth has also presented 3 petitions from the medical practitioners of Tipperary, and King's and Queen's Counties, in Ireland, with 78 signatures attached, praying the House to adopt measures for ensuring permanent support to Medical Charitable Institutions in Ireland, and for placing them under the controul and supervision of competent professional authorities.

Mr. Wakley has presented petitions, praying for an effectual reform in Medical Law, from Dr. James Bedingfield, of Stowmarket, and eight physicians and surgeons of Bridgnorth, in Shropshire.

Mr. Hume, M.P., has presented to the House of Commons a petition from the Kilkenny Medical Association, signed by Mr. Greene (the President) and Mr. Cane (the Secretary) on behalf of the Association, praying for the enactment of an effectual measure of Medical Reform.

PARLIAMENTARY ESTIMATES, 1840—41.

Amongst the items included in the "Estimates" of State expenses for the year ending March, 1841, we find the following calculations relating to matters of interest to members of our profession:—

To defray the expense of the National Vaccine Establishment:—

	£.
President of the College of Physicians / One of the Censors / President of the College of Surgeons	300
Registrar	200
Inspector of Vaccination	200
Messenger	52
Rent, taxes, and repairs	161
Eleven stationary vaccinators, viz,	
One at £150 per ann. / One at 100 „ / Two at £75 each, 150 „ / Seven, 50 each, 350 „	760
Miscellaneous expenditure	177
	£1850

Probable Expense of Confining and Maintaining Criminal Lunatics (65 males and 15 females) in Bethlem Hospital:—

Victualling and clothing, at 27*l.* 10*s.* per ann. each	£2200
Seven keepers, at 40*l.* per annum	280
Victualling and clothing ditto, at 35*l.*	245
Medical and other officers (seven)	200
Contingent charges and repairs	300
Maintenance of six incurables	165
	£3390

Probable Expenses (Medical) of the University of London:—

Salaries of Examiners:—	£.
2 in Medicine, at 250*l.* per ann. each	500
2 in Surgery, at 250*l.* ditto	500
2 in Anatomy and physiology, at ditto	500
1 in Physiology and comp. anat.	250
1 in Midwifery	100
1 in Mat. med. and pharmacy	100
1 in Chemistry (medicine) at 100*l.*	100
1 in Botany, at 50*l.*	50
1 in Laws and jurisprudence, at 50*l.*	50
3 Exhibitions in medicine, 30*l.* per ann. each, 1840 (2 qrs.)	45
3 Scholarships in ditto, at 50*l.* per ann. each, 1840 (2 qrs.)	75
20 Gold medals in medicine, at 5*l.* each, 1840	100
1 Gold medal in medicine, 10*l.* 1840	10
	£2380

Fees estimated from the Receipts of the current year:—

Bachelor of Arts	£170
Bachelor of Medicine	125
Doctor of Medicine	20

IN IRELAND.

Westmoreland Lock Hospital	£2500
Lying-in Hospital	1000
Dr. Steevens' Hospital	1500
Fever Hospital, Cork-street	3800
Hospital for Incurables	500
(These five hospitals have private incomes besides.)	
Hardwick Fever Hospital, 144 patients, 4*d* a day	1663
Whitworth Chronic Hospital, 82 patients, 4½*d* a day	1112
Richmond Surgical Hospital, 120 patients, 4½*d* a day	1885
Two Physicians, Hospital of Industry	200
Two ditto ditto, 60*l.* each	120
Two Apothecaries, 60*l.* and 40*l.*	100
Westmoreland Lock Hospital	2539
Lying-in Hospital, 2000 patients (18*s* 10*d* each), salaries, &c., &c.	3414
The private income of the Hospital towards this sum is about 2000*l.*	
Surgeon of the State Household of the Lord Lieutenant, salary	100

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

PATHOLOGICAL MEETING.

Tuesday, May 5, 1840.

Dr. CLENDINNING, Vice-President.

GROWTHS FROM THE LABIUM PUDENDI.

Mr. CHARLES HAWKINS exhibited some specimens of growths from the left labium which had been removed by Mr. King, of Whitehaven, and by him transmitted through Sir B. Brodie to the Society. These growths were about three years in attaining their present size, were quite unattended by pain, and occasioned no inconvenience, except from their weight, until about three months previous to their removal, when one of the smaller ones became inflamed, hardened, suppurated and burst, and discharged a thin sanious fluid. Fearing lest it should form an ill-conditioned ulcer, Mr. King recommended its immediate removal. But little blood was lost in the operation, and only one vessel required ligature. The patient is a widow, who has been married twice, has one child by her first husband, and is forty years of age. Her health is generally good; catamenia regular, though she has occasionally suffered from menorrhagia. The tumours exhibited, consisted of four larger and several smaller ones, and had very much the appearance of English figs with elongated necks. They weighed altogether seven pounds and a half avoirdupois; they were corrugated on the surface, from having been placed in spirit; in their natural state they were smooth. They seemed to consist entirely of elongations of the skin, the cellular tissue being distended with fluid, which on the tumour being cut, escaped. These growths, in the opinion of Dr. Clendinning and Mr. North, bore some analogy to the natural productions of the same parts in the Hottentot female.

CLOTS IN THE FEMORAL VEIN.

Mr. HAWKINS also exhibited a portion of the right femoral artery and vein, taken from the upper part of the thigh of a young man, eighteen years of age, who fell from the mast-head of a vessel a height of fifty-two feet. There was a simple transverse fracture of the right femur, injury of the sternum and concussion of the brain; mortification came on in the leg on the fourth day; he complained of pain in the calf of the leg; the foot presented a mottled appearance on its dorsum, was cold and insensible, and no pulsation could be felt in the artery, below the seat of fracture. He died eleven days after the accident, and after death the femoral vein, at the part exhibited, was found to contain a coagulum of blood, which was supposed to have resulted from injury inflicted at the time of the accident, or during the convulsions consequent upon the injury of the head.

Dr. CLENDINNING saw no marks of injury or inflammation in the vessel. The occurrence of clots in vessels under these circumstances was by no means rare.

Mr. ERASMUS WILSON remarked that the artery appeared quite free from disease. He considered that the clots in the vein might have been formed during the progress of the mortification. Clots of this description did not, however, give rise to *gangrene*, or it would be much more commonly present in old people; in whom these clots were frequently found. He had, in such persons, frequently observed a thickening of the coats; and coagula which presented a very close adhesion with the lining membrane of the vein.

DEPOSITIONS OF TRIPLE PHOSPHATE IN THE BLADDER.

This specimen was also exhibited by Mr. Hawkins, and, like the two former, transmitted to the Society by Mr. King. The depositions were taken from the bladder of a young man who died exhausted, after suffering for a long period from the irritation of this very painful disease. During the last three months of his life, he had been passing daily a quantity of ropy mucus and small calculi; the crystalline form of the latter caused him great agony. They frequently stopped up the urethra, and required to be removed with a pair of slender dressing-forceps, when forced sufficiently low by the pressure of the accumulated urine behind them. The only remedies which afforded him any relief, were diluted nitric acid and laudanum. The injection of tepid water into the bladder gave ease for a time; but, at last, the calculi became so troublesome, by getting into the eye of the catheter, that it was impossible to withdraw it without giving great pain. The body was examined twenty-two hours after death. The abdominal muscles were rigidly contracted and disproportionately large, when compared with those of other parts of the body, which was much emaciated. The contents of the thorax were healthy. There were about two ounces of bloody fluid between the bladder and rectum. The right kidney was almost completely disorganized, consisting of a collection of cysts of various sizes, from that of a pea to that of a walnut, apparently the dilated calices, which were filled, some with pus, others with a turbid fluid like chalk and water, but there was no calcareous matter found in any of them. The left kidney was enlarged, but healthy in structure. Parts of it, however, were a little darker coloured than usual; the right one being lighter coloured, approaching to orange or light brown, the left more inclined to purple. The right ureter was

larger than the left, being about a quarter of an inch in diameter. On removing the bladder, it gave way at that part where the peritonæum is reflected from it to the rectum, and some calcareous matter escaped with the urine. The bladder did not, however, collapse, but maintained its former size—that of a closed hand. A little anterior to the bulb of the urethra, a calculus the size of a horse-bean was firmly impacted, and adhered strongly to the mucous membrane of the canal. As far as the bulb, the urethra appeared healthy; the membranous and prostatic portions contained numerous pouches, some filled with pus and calcareous matter, others with urine, and ropy mucus. The bladder was universally diseased, and thickened in such a manner as to have more the appearance of an uterus than a bladder; its neck was thickened, and contained various pouches. The prostate gland was almost destroyed by the numerous cysts formed around the neck. The bladder itself contained the mass of calcareous deposit, enveloped in bloody mucus. Mr. Jones, of University College, had examined the deposit for him (Mr. Hawkins), and found it to contain a large quantity of phosphate of lime, a large quantity of triple phosphate, a smaller quantity of uric acid, and a very small quantity of animal matter. The two latter are about half as much as the two former together. The crystals from their appearance are phosphate of ammonia and magnesia.

Mr. PERRY remarked that we were still in the dark as to the cause of the triple phosphate calculus, producing so much more suffering than other urinary formations. He recollected a case of this description of calculus, in which the suffering was so great, that a celebrated surgeon refused to operate, because he feared the bladder was diseased, although he was able to detect the presence of two or three stones. This patient died, and the bladder was found to contain three calculi of the triple phosphate formation. The coats of the bladder were quite healthy, the mucous surface showed no marks of disease; but, on observing it through a microscope, it was found to be studded with small points of calcareous matter like pieces of glass. These were adherent to the membrane, but there was no increased vascularity around them. Dr. Prout had observed that triple phosphate calculus, whether rough or smooth, and whether the bladder was healthy or diseased, was productive of much suffering. This suffering could not be attributable simply to a mechanical cause.

Mr. ERASMUS WILSON considered that the specimen exhibited was an illustration of the deposition of calcareous matter in a nidus of fibrine or lymph. In a case he had had under his care in St. Pancras Infirmary, the patient suffered much from a diseased state of the bladder, his urine was turbid, sometimes containing pus, blood, or clots of blood. After much suffering he died. On examination after death, the organs of the pelvis were found to be involved in one mass of cancerous disease, and the bladder was so much disorganised as to be much torn in its removal. On looking at its interior, an appearance was observed similar to a fungous growth, but which proved to be simply a deposition of lymph on the ulcerated surface of the mucous membrane; this lymph was filled with deposits of the triple phosphate. He considered that the preparation exhibited was somewhat similar, so far as it illustrated a deposition of calcareous matter in a nidus of fibrine or mucus.

Mr. HAWKINS knew nothing more of the case than had been given to him by Sir B. Brodie. These were deposits, similar to those frequently found on the catheter, after it has been left for a short time in the bladder. These did not appear to possess any nidus, like that referred to by Mr. Wilson.

Mr. B. PHILLIPS had seen many cases of calculus at the Bristol Infirmary. He had always observed the mulberry calculus to be attended with most suffering to the patient.

Dr. CLENDINNING considered that the degree of suffering in cases of stone would depend on two causes, the nature of the calculus, and the susceptibility to irritation of the patient. He had observed that the triple phosphate was usually formed in persons of a broken-down and irritable constitution. This might in some degree account for the extent of suffering present.

Dr. H. LEE said that Dr. Murray attributed much of the suffering, in cases of calculus, to the condition of the urine, with regard to its acidity, &c. It would appear that the use of water impregnated with calcareous matter did not influence the formation of calculi in the bladder. The water supplied to the inhabitants of Montpelier was strongly impregnated with carbonate of lime, yet they were not liable to stone.

Dr. HODGKIN agreed with the President as to the cause of the greater degree of suffering in cases of triple phosphate calculus than in others. He could also confirm the opinion of Mr. Perry on this point. He thought, that both in Mr. Perry's case and that related by Mr. Hawkins, the calcareous matter had formed in the bladder; for although in Mr. Perry's case there did not appear to be any disease present, he (Dr. Hodgkin) thought that the crystals would not have adhered so closely to the mucous membrane if this had been healthy in structure and function.

COMPLICATED DISEASE OF THE CHEST.

Dr. CLENDINNING showed a portion of a

heart which had been taken from a subject who had laboured under a complication of diseases, and of whom he related the following particulars:—The patient was a female, thirty-five years of age, and from February to August, 1838, had been under the care of Dr. Sims, at the Marylebone Infirmary, for cough, palpitation of the heart, and convulsions occurring at irregular intervals. She was admitted into the infirmary a second time in September of the same year, under Dr. Clendinning, the convulsions, which had been removed to some extent, having again returned. On examining the patient he found in the occipital region a tumour of large size, which the patient informed him she had only recently observed. She said that it was sometimes larger than at others, and seemed occasionally to give the sensation of its containing fluid. On examining the chest, the heart gave all the physical signs of hypertrophy with valvular disease, and the lungs all the symptoms of universal bronchitis and emphysema. The legs were anasarcous, and the urine albuminous. She lived eighteen months under a great variation of symptoms, and then sunk under the united influence of pericarditis and large sloughs upon the sacrum.

Now, the convulsions in this case were at first suspected to be epileptic by Dr. Sims; but they did not occur at such regular intervals as epileptic seizures generally do. On the contrary, she would sometimes have several convulsive attacks in one day (on one occasion she had forty-six in the twenty-four hours), and at other times would be free from them for weeks. The dropsy had at first been only on the right side; but during the last three months of her life had become general, and during this time the convulsions were absent.

On examination after death, the occipital region first attracted attention; the tumour, noticed above, was found to be entirely osseous, projecting externally only, and in no way encroaching on the brain. The convolutions of the brain were full and flattened, leaving no space between them. The substance of the organ was firm and pale, the ventricles small, and containing no fluid. The brain weighed much heavier than usual, and was very hypertrophous. The lungs were universally emphysematous. In the heart there was found to be an indurated and patulous state of the mitral and aortic valves, the pericardium was adherent to the heart, the left ventricle in a state of extreme hypertrophy, and the right ventricle nearly normal. The heart was very large. One of the kidneys exhibited Bright's disease in the first stage, the other kidney was mottled and hypertrophied. The points of interest in the case were the following. There was no structural change to account for the convulsions; on what, then, did these depend? He referred their occurrence to two causes, viz., the hypertrophied state of the brain, producing permanent pressure; and the albuminous condition of the urine, which had probably produced an urinous condition of the blood: this fluid was, however, not examined. He hardly knew which of these causes was the most likely originator of the convulsions; but probably both had a share in their production. He had reason to know that these causes were sufficient to account for the symptom mentioned, as he had before had a case under his care in which a patient, with anasarca following scarlet fever, perished from the dropsical accumulation, and the occurrence of violent convulsions, in one of which he died, and after death the kidneys were found to be in the first stage of Bright's disease, and the brain pale, firm, and hypertrophied; no other lesions were observed. This case had led him to believe that the convulsions in the one under consideration had probably the same origin. Another point of interest in this case was the great variation observed at different times in the sounds of the heart, the abnormal sounds being sometimes present, sometimes absent, the greatest variations occurring at very short intervals.

After the woman had been fifteen months in the hospital, she was affected with general dropsy, the convulsions ceased almost entirely, and she became the subject of the most perfect fits of asthma; the occurrence of these spasmodic thoracic attacks, he considered, must have been the result of vicarious morbid action, and were so far interesting. Another feature of the case, which was rather curious than singular, was the circumstance of the patient having on one occasion suddenly lost her voice, and, at the end of several days, as suddenly recovered it. It had been mentioned that the anasarca had been at first on the right side only; it was curious, that during the convulsions, the eyes, head, and limbs were drawn to the affected side.

MEDICAL SOCIETY OF LONDON.

Monday, May 4, 1840.

Dr. CLUTTERBUCK, President.

Dr. CROWNE related the following case of

EMPHYSEMA OCCURRING DURING PARTURITION.

The patient was a lady whom he had attended in three previous labours, which presented no unusual circumstances. The fourth labour was more than usually difficult. The child was large in proportion to the stature and the size of the pelvic capacity of the mother, and the head presented with the face to the pubes. During several hours there was strong uterine action, accom-

panied by powerful auxiliary abdominal efforts, with some, but not commensurate, progress of the fœtal head. The strength of the voluntary efforts were such as made him apprehensive that some mischief might be produced, and emphysema began to show itself in the neck and face of the patient. During every pain the parturient efforts continued to be intense, and the emphysema gradually increased, until the cellular substance over the clavicles, the upper part of the mammæ, the neck and the face, was very considerably inflated. The eyelids had become so distended as very nearly to close up the eyes. The appearance of the symptoms had become quite formidable, and at each pain the distension increased so rapidly, that Dr. Chowne did not deem it prudent to trust any longer to the efforts and strength of the patient. Although the head of the fœtus was high in the pelvis, he applied the forceps, and, by their assistance, accomplished the birth of the child. The placenta was removed after a short time, saline medicines were prescribed, the ordinary precautions used, and the convalescence was, in every respect, favourable. No treatment was adopted with especial reference to the emphysema, which gradually diminished; and, although for four or five days after the confinement very obvious crepitation, on pressure with the finger, was perceptible over the clavicle and parts adjacent, and also in the face, by ten days after delivery it had totally disappeared.

Emphysema, Dr. Chowne remarked, was a species of injury consequent upon difficult labour, which occurred less frequently than might be expected, considering the force with which the voluntary exertions were made, more especially as we sometimes saw emphysema of a somewhat similar character, and under circumstances of the same kind, but from causes apparently less adequate to its production, as by efforts of lifting, running, or straining, in which, although the exertions were great, yet they were not so violent, continued so long, nor so frequently repeated, as in cases of difficult labour. We occasionally saw a similar state produced during violent hooping-cough, pneumonia, bronchitis, measles complicated with severe pulmonary affections, and in cases where foreign bodies had passed into the larynx.

The pathology of that species of emphysema which was occasioned by difficult labour, and severe straining under other circumstances, where the air cells of the lungs had been ruptured, had been satisfactorily explained. There appeared to be no reason to doubt, that not only the air cells, but the interlobular structure, underwent laceration, and that the air crept along on the outside of the air passages, through the mediastinum, and, finally, to the external parts. In a case recorded by Dr. James Hamilton, it was caused by a small laceration of the larynx. With reference to the mode of prevention, he (Dr. Chowne) believed that the primary object would be to relieve the uterus and the abdominal muscles from the necessity of acting, by manual or instrumental assistance. He had reason to believe that, in the case detailed, the inflation would have been augmented in a frightful degree, had not assistance been rendered to the patient. Cases were mentioned by authors in which the swelling had extended to the extremities of the fingers, and involved the whole of the body.

With regard to the treatment of these cases, Dr. A. Hamilton had recorded an instance, in which bleeding, rubbing with camphorated oil, and opiates were employed, the swelling began to yield in the course of a week; but in the subject of his own case, Dr. Chowne had recourse to nothing but ordinary treatment, and the patient was free from the emphysema in about ten days.

There were no symptoms preceding the attack to lead to the suspicion that it would occur, neither was there any thing remarkable in the state of the patient previous to the commencement of the parturient process. The circulation was scarcely affected on the first occurrence of the emphysema, there appeared to be no indication to fulfil, except that which has been detailed.

There was no rigidity of the os uteri, or of the other parts; the whole difficulty was caused by want of capacity in the brim of the pelvis, to permit the transit of the head in the unfavourable position which it had taken. Under these circumstances, Dr. Chowne could not see upon what principle bloodletting would have been advantageous, although one of the members of the Society seemed to think it should have been resorted to.

Monday, May 11.

Mr. Iliff related the following case of

EMPHYSEMA OCCURRING AFTER SEVERE PRESSURE ON THE CHEST.

The subject of the disease was a gentleman, who, 14 days since, being anxious to make the elephant at the Surrey Zoological Gardens perform some of its feats in the absence of the keeper, entered the den for that purpose; the elephant, by pressing his curled trunk against the breast of the intruder, fixed him against a post, and confined him on either side by means of his tusks. Mr. Iliff, who was near, hearing a struggle for breath, and a half cry, had his attention called to the elephant's den, where he observed the unfortunate position of the gentleman; he rushed into the cage and seized the elephant by the ear; the animal immediately let go his hold, and the gentleman struggled for breath; he was in a state

of great collapse, covered with a clammy perspiration, and only partially conscious of his condition. He recovered his faculties in a short time after the administration of a little wine and water, and was conveyed home. Mr. Iliff had examined his chest, and found there was no fracture, he advised that as soon as possible the usual medical attendant of the family should be sent for. He was, however, requested to see the patient again at night, between nine and ten o'clock; he was then suffering much pain, but refused to tell his friends the cause of his illness. He found him still in a state of collapse, with reaction taking place, and there was general emphysema over the entire thoracic region, with the exception of the sternum, over which the injury had been inflicted; respiration was rapid and weak, but there had been no expectoration of blood, no cough, and no local pain; percussion and auscultation detected nothing abnormal. Under these circumstances he merely prescribed an aperient, and left him for the night. The next morning his bowels had been moved, reaction had come on, but his tongue was brown. Mr. Lawrence saw him at 2 o'clock, and thought there was no indication present of lesion of the pleura, or fracture of the ribs, and merely advised quietude, and keeping down excessive action. The case went on well; the pulse from 120 has now diminished to 80; the air has been gradually removed from the cellular membrane of the chest; he can take a full inspiration; his tongue is moist, and he can leave his room. He (Mr. Iliff) was still at a loss to know from whence the air in this case came.

MEDICINE IN CHINA.

Mr. Ley read a paper on this subject, but the matter detailed consisted of translations from books, and was not the result of the author's experience. The Chinese, it would appear, use calomel, verdigris, copper pyrites, orpiment, and other powerful medicines, as external agents. They seem to practice on no principle, and many of their remedies are of the most absurd character. They are profoundly ignorant of anatomy.

BRITISH MEDICAL ASSOCIATION.

Exeter Hall, May 5, 1840.

William Farr, Esq., in the Chair.

The Minutes of the last meeting having been read and confirmed,

T. Sweeney, Esq., Market-street, Herts, was admitted a member of the Association.

A letter was read from G. P. Heyward, Esq., of Egham, on illegal practitioners.

Dr. R. D. Thomson brought up the Petition relative to the ensuing Census, agreeably to a resolution passed at the last meeting.

To the Honourable, &c. &c.

The Council of the British Medical Association beg to submit to your Honourable House, that the Decennial Census of the United Kingdom has been instituted to determine the increase or diminution of the population:

That the amount of sickness, although hitherto omitted, bears directly upon this question:

That the knowledge of the numbers of sick at different ages, in different localities, and under different circumstances, will be of the greatest utility to the Friendly Societies of the labouring classes, and cannot fail to promote medical science, to lead to the removal of much physical suffering, and contribute to the improvement of the public health:

That the numbers infirm and labouring under severe sickness can be easily determined and specified:

Your Petitioners, therefore, humbly pray your Honourable House to direct that the healthy, sick, and infirm, in the population of the United Kingdom be specified in the Census of 1841:

And your Petitioners will ever pray, &c.

After some discussion on the operation of the medical portion of the Poor-Law Amendment Act, it was

Resolved unanimously,—"That a Committee be appointed to wait upon Lord John Russell, and other Members of Parliament, with a view of procuring the insertion of the recommendations of the medical witnesses of the Poor-Law Commissioners into the Bill now before the House of Commons, and to further, at the present juncture, by all means in their power, a full reform in connection with parochial medical affairs."

The meeting then adjourned until Tuesday, May 19th.

UNIVERSITY OF LONDON.

The following gentlemen have been elected Examiners in Medicine for the ensuing year:—

Medicine.—Dr. Billing and Dr. Watson.*

Surgery.—Mr. Bacot and Sir Stephen Hammick.

Midwifery.—Dr. Locock.

Anatomy and Physiology.—Mr. Kiernan and Professor Sharpey.†

Physiology and Comparative Anatomy.—Dr. Roget.

Chemistry.—Professor Daniell.

Botany.—Professor Henslow.

Materia Medica and Pharmacy.—Mr. Pereira.

* In the place of Dr. Tweedie.

† In the place of Professor Todd.

ST. THOMAS'S HOSPITAL.

ADJUDICATION OF THE PRIZE IN MIDWIFERY.

We have received the following statement relative to the judgment upon the prize of midwifery, in the above school, from a gentleman connected with the hospital:—

"Considerable interest has been excited among the pupils during the last few days, by a dispute which has arisen with respect to the midwifery prize. The pupils were requested, by notice, to meet Dr. Cape, the lecturer, in the theatre, on Friday week last, and accordingly a large number assembled. Dr. Cape addressed them, and from his statement I learned that his decision had been objected to as unfair by the candidate he had placed as second. The Doctor read a note he had received from this gentleman, demanding that the answers might be submitted to the judgment of any lecturer on midwifery in the kingdom. To this Dr. Cape replied, that he thought such a mode of decision would be an improvement on the present one, but that it would be unfair to the successful candidate that his own judgment, on this occasion, should be open to any appeal; that although the answers of the second may have shown more reading, they did not prove the same attendance on lectures. The point of the answer was a distinct refusal to comply with the demand for an inquiry into the fairness of his decision. This called forth a further correspondence, and the matter rested private until Friday, when Dr. Cape still persisted in his refusal, although he said he should not fear the appeal.

"As this subject is likely to be brought before the Board of Governors, I made inquiry as to the questions which were proposed to the candidates, and find them to be as follows:—

1. Describe the contents of the gravid uterus at the fourth month.
2. Give the causes of after pains.
3. The treatment of hæmorrhage after the expulsion of the placenta.
4. The treatment of phlegmasia dolens.
5. ——————— milk fever.
6. ——————— puerperal fever.
7. What aperients are proper in menorrhagia?—what in dysmenorrhœa?—what in chronic amenorrhœa?
8. Treatment of the first stage of carcinoma of the uterus.
9. Diagnosis of hydatids of the uterus, from pregnancy.
10. Mode of preventing the development of scrofula.
11. Difference between infantile remittent fever and tabes mesenterica.
12. Diagnosis and treatment of syphilis in children.

"I shall not stop here to inquire whether these questions are calculated to test the knowledge of any man on the principles and practice of midwifery; the question is, whether any man who felt that he had made a just decision would not immediately adopt the proposal, to submit the answers to an unprejudiced and talented person, rather than allow his character to suffer from an imputation of dishonourable conduct. The refusal betrays a fear of exposure, and nothing else; for it could not be unfair to the successful candidate to have the decision in his favour confirmed, which it undoubtedly would be, if, as Dr. Cape asserted, his answers were better in the proportion of 3 to 2. The Doctor will give no satisfaction in any way; he evidently fears an appeal; and I must say, that so obstinate a refusal of a reasonable request comes with peculiar ill grace from a man who, on a former occasion of a similar nature, was obliged to post a notice, that his honour, like that of Cæsar's wife, must not be suspected."

POTASSA FUSA IN STRICTURES OF THE URETHRA.

To the Editor of THE LANCET.

SIR:—You will oblige me by inserting in the next week's LANCET my reply to Mr. Whately's letter, contained in your last Number of May 9th. I am, Sir, your obedient servant,

R. WADE.

68, Dean-street, Soho,
May 11, 1840.

Mr. Whately accuses me of having, in my observations on the Treatment of Strictures of the Urethra, lately brought forward at the Westminster Medical Society, "omitted to mention the name of his late father, who was the first who proposed and applied the caustic potash to strictures of the urethra, and published a work upon the subject;" also, of wishing it to be inferred, "that I was the original introducer of that remedy, and that it was a new and original appliance in my hands."

That my paper on the treatment of strictures of the urethra was entirely free from the injustice and dishonesty with which Mr. Whately charges me, I can confidently appeal to your reporter, as well as to the other members of the Westminster Medical Society who were present when it was read. In that paper, before, in any way, alluding to my own views upon the subject, I not only stated, that to the late Mr. Whately was undoubtedly due the very great merit of having been the first who proposed and applied the potassa fusa to strictures of the urethra; but, also, minutely described the mode of its application recommended by that gentleman, as well as the particular cases in which he used it.

In justice to myself I must, however, ob-

serve, that my views differ very materially from those of Mr. Whately, as to the kinds of strictures in which the potassa fusa proves most valuable; the quantities that may be safely and advantageously employed; as well as the periods of its application.

EPIZOOTIC IN CATTLE.

Mr. Morton, of the Veterinary College, has been paying much attention to this remarkable and destructive disease, and has observed much analogy between it and the severe forms of eczema impetiginodes which attack the human being. If, he observes, this analogy should be truly proved to exist by subsequent and more careful researches, the epizootic must be considered as an exceedingly virulent form of eczema, attended with much constitutional disturbance, and involving ultimately the mucous membranes.

Mr. Symonds, of Twickenham, is pursuing the history and pathology of the disease with great ardour. He has made several interesting experiments upon its contagious powers, which he promises to embody in a treatise on the epizootic disease, which is preparing for the press.

Mr. Dalrymple, of Hollies-street, Cavendish-square, has made a careful microscopic examination of the blood taken from one of the mammary veins of a cow, which was killed in consequence of the severity of her disease rendering all prospect of recovery hopeless. He could detect no pus globules, nor any abnormal appearance, in the milk, which separated immediately on being taken from the animal into an excessively offensive bloody serum, and a grumous fatty and albuminous matter; he found pus globules and altered mucus corpuscles in abundance. —Sub-Ed. L.

A SUCCESSOR FOR MORISON.

To the Editor:—Surely the Commissioners of Stamps and Taxes should also allow the name of the following animal to be emblazoned with the same care and patronage as that of another quack, who informs us that they "have been pleased to allow him to have *his* name engraved on the *Government Stamp* in *white* letters on a BLACK ground." Israel Ferment, an old man, well known to the public as a witness against the Chartists in the Newport affair, has since the trial been residing at Bristol. At Newport he obtained a living as an astrologer and quack; the quack part of his trade he is now practising in Bristol, as will appear by the following notice, which is highly creditable to the English character:—"To the Public.—Mr. Israel Ferment engages to cure king's evil, cancers, asthmas, ulcerated sore legs, gravel in the kidneys, and sore eyes, if the candle is not gone out; and cramp in the bones; he also draws pain from the head, without leeching, cupping, or blistering. If the lines are not too much decayed, he will tell their complaint, because he is a worm doctor, residing in Greyhound-court, Lewinsmeade, Bristol."

May 2, 1840.

DIGESTIVE ORGANS OF INFUSORIA.

After careful microscopical observations of the digestive organs of infusoria, M. Meyen has arrived at the conclusion that the rounded bodies seen in these animals, particularly after the ingestion of coloured food, are not cœcal pouches, or stomachs continuous with the alimentary canal, as described by Ehrenberg, and believed by many able physiologists; but that they are isolated globules of ingested substance, moving freely in the abdominal cavity, and unrestrained by membranous parietes. These globular bodies were first noticed by Gleichen in 1781, after feeding infusoria with indigo and carmine, when he observed that the particles of each substance formed in a very short time globular masses in the interior of the animals. Ehrenberg thought he could trace a flexuous intestine along the course of these globules, which he has delineated in his splendid work. More recent observers have failed in their search for this intestine, but have seen the globules changing their position, and sometimes making a complete revolution along the internal parietes of the animal. M. Meyen explains their formation in the following manner. He says, that the particles attracted towards the buccal orifice by the action of cilia, are conveyed along the œsophagus to the stomach, where they are collected into a globular ball, and surrounded by a mucous secretion; that the stomach opens abruptly into the abdominal cavity without an intestinal prolongation, and into this cavity the balls are protruded, being connected with each other by the mucosity surrounding each successive globule; that when the abdominal cavity is filled with these balls, they are expelled through the anal orifice. The sacs which are seen in other infusoria are not, according to M. Meyen, stomachs, but cœcal cavities containing fluid, varying in size, appearing or disappearing under the eye of the observer, and having no communication with the exterior. They resemble cavities which are formed in the mucus of true cellular plants, particularly aquatic cryptogamia. If these views of M. Meyen should be verified by other investigators, and be found correct, the term polygastrica as applied to the class of infusory animalcules, will require alteration.—*Abridged from the Edin. New Phil. Jour.*

EDINBURGH ROYAL INFIRMARY.

The vacancies in this Infirmary were filled on the 4th inst, by the appointment of Mr. Handyside to the office of surgeon; and of Mr. Duncan and Mr. Miller to the offices of assistant surgeon; the order of rank being determined according to the usual rule, by their seniority as members of the College of Surgeons.

Mr. Ferguson received a piece of plate at the hands of his friends in Edinburgh, on the 5th inst, accompanied by a profusely laudatory speech from Professor Lizars. He was to start, on the next morning, for his new appointment in the King's College, London.

Honours Conferred on Medical Men.—M. Marjolin, Professor of Surgery in the School of Medicine, Paris, and M. Gerdy, have been nominated, the one Officer, the other Knight of the Legion of Honour.

ROBERTSON *versus* SYME

The Edinburgh doctors are warring most spiritedly among themselves, to the no small amusement of the more peaceable lookers on. What is to become of the patients, when the Doctors' minds are engrossed with awful thoughts of legal perdition against their rivals? We have before us a letter addressed by Mr. Syme to the "Lord Provost, relative to an Association of Private Lecturers, calling themselves Queen's College." Mr. Robertson, it appears, was anything but pleased with some of the remarks contained in this epistle; the lawyers were consulted, and the case very naturally merges into the title which we have selected for the heading of this paragraph.

DEATHS.

We regret to say that Mr. Field, the Chairman of the Court of Examiners of the Apothecaries' Company, died suddenly during the past week. He was well in health during the day, and had gone in the evening to the Literary and Scientific Institution in Aldersgate-street. On his return he was called to see a man who had taken some wrong medicine by mistake, and, running briskly up three pair of stairs, fell dead as soon as he entered the room. An inquest was held upon the body, by Mr. Wakley, on Saturday last.

On a post-mortem examination being made by Mr. Skey, it was ascertained that a small artery at the base of the brain had been ruptured, and had given rise to an extravasation of blood. There was no trace of disease of the heart.

Death of the Hygeist.—The *Journal des Debats* announces that James Morison, whom the Editor facetiously denominates a celebrated English physician, died in Paris last week at the age of seventy-two years.

BOOKS RECEIVED.

A Letter to Sir B. Brodie, containing a Critical Inquiry into his "Lectures Illustrative of Certain Local Nervous Affections." By Wm. Goodlad, M.R.C.S.L., Manchester. London: Longman and Co., 1840, 8vo, pp. 154.

Practical Observations on Blindness from Cataract. By J. P. Thompson, M.R.C.S.L., Nottingham. London: Longman, pp. 22.

A Memoir on Extra-Uterine Gestation. By Dr. Wm. Campbell, Edinburgh. London: Longman and Co., 1840, pp. 154.

An Address delivered at the Anniversary Celebration of the Birth of Spurzheim, and of the Organisation of the Boston Phrenological Society, Dec. 31, 1839. By George Combe, Esq. Boston, 1840, pp. 28.

A Veterinary Toxicological Chart; containing the Agents which are known to Cause Death in the Horse; with the Symptoms, Antidotes, Action on the Tissues, and Tests. By W. J. T. Morton, Lecturer on Veterinary Materia Medica, in the Veterinary College. London: Longman and Co., 1840.

An Essay on the Treatment and Cure of Pulmonary Consumption; on Principles natural, rational, and successful: with Suggestions for an Improved Plan of Treatment of the Disease among the lower Classes of Society, &c. By George Bodington, Surgeon. London: Longman, 1840, pp. 60.

The Medical Examiner. Nos. 42 to 51. Published at Philadelphia, U. S.

A Practical Work on the Diseases of the Eye, and their Treatment, Medically, Topically, and by Operation. By Frederick Tyrrell, Surgeon to St. Thomas's Hospital, &c. 2 vols. 8vo, with coloured plates. London: John Churchill, 8vo, pp. 533 and 566.

TO CORRESPONDENTS.

Communications have been received from *Mr. G. A. A.*, Northern Hospital, Liverpool; *Dr. Alexander*, of Halifax; *Mr. Hocken*, *Mr. Atkinson*, *Mr. Bloxam*, *Dr. Andrews*, *and Mr. Chavasse*.

Dr. Barnes Vaughan's request, relative to the return of Mr. Turner's letter, shall be attended to.

The letter of "*A Retired Physician*," on the slaughtering of animals for food, shall appear next week.

The "*Preston Chronicle*" has been received.

Mr. W. H. Duncan's letter on the "Mortality of Liverpool" shall appear in our next.

Errata.—At page 236, col. 2, line 3, read, "payment of the sum stated therein shall not be made;" p. 236, col. 2, line 21, for "him," read *them*; p. 236, col. 2, line 30, for "Septenniary," read *Centenary*; p. 244, col. 1, line 47, for "are," read *is*.